

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2292.—Vol. XLIX.

LONDON, SATURDAY, JULY 26, 1879.

WITH [SUPPLEMENT.] {PRICE SIXPENCE
PER ANNUM, BY POST, £1 4s

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER
AND MINING SHARE DEALER.
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

Business negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON; SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or parts—

100 Cambrian, offer wtd.	25 Leadhills, £1 18s. 9d.	5 Santa Barbara, £2.
30 Colorado, £1 13s. 9d.	5 Llandidloes.	25 St. Harmon.
30 East Van.	10 Red Rock, 7s. 6d.	5 Tankerville, £2 15s.
20 Eberhardt.	30 Morfa Du, 15s. 6d.	30 Van Consoles and Glyn
25 Frontino, £2 1/4.	100 Penstarens, 4s. 6d.	Amalgamated, 6s. 3d.
25 Hero-foot.	25 Parys Corporation,	15 W. Asheton, 15s. 9d.
100 Javali, 7s.	10s.	10 Wye Valley, 12s. 6d.
	10 Richmond, £2 1/4.	

*. SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.)

RAILWAYS—SPECIAL BUSINESS.

FOREIGN BONDS—SPECIAL BUSINESS.

Fortnightly accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE LONDON.
ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
AND
MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.

RAILWAYS, BANKS, FOREIGN AND COLONIAL BONDS, TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.

Accounts opened for the Fortnightly Settlement.

A Stock and Share List free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—

15 Aberllyn, £9.	20 East Van, 12s.	75 Nouveau Monde, 15s
100 Almada, 7s. 9d.	40 Frontino, £2 1/4.	200 Penstruthal, 2s.
50 Blue Tent, £2.	80 Fronchoch.	100 Penstarens, 5s.
70 Bodidris.	150 Glenroy, 5s. 3d.	50 Port Phillip, 9s. 6d.
3 Carn Brea, £2 1/4.	5 Gt. Laxey, £15 4s.	100 Parys Copper, 10s.
100 Cambrian, offer wtd.	30 Great Holway.	10 Roman Grav., £7 1/2.
60 Chontales, 7s.	25 Herodsfoot, £2 1/4.	20 Richmond, £7 1/2.
40 Colorado, 3s. 6d.	40 Hulfail.	20 Ruby & Dunderberg,
5 Cape Copper, £2 1/4.	100 Javali, 6s. 3d.	30s. 6d.
20 Chapel House.	75 Kapanga, 5s. 9d.	15 So. Frances, £7 1s. 3d.
15 D'Ersby Con., £5 1/2.	40 Lead Era.	15 Tankerville, £2 6s. 6d.
25 Devon Consols, 36s. 6d.	40 Morfa Du, 15s. 6d.	180 Tamar Silver Lead.
100 Don Pedro, 13s. 6d.	25 Melanear.	10 Van, £14 1/2.
40 Eberhardt, £2 1s. 6d.	15 Mellanear.	20 Wh. Crebor, £2.
50 East Caradon, 9s. 6d.	20 New Quebrada, 41s.	15 Wh. Peavor, £2 1/4.
10 East Lovell, 36s. 6d.		

*. RUBY AND DUNDERBERG.—SPECIAL BUSINESS in the SHARES and DEBENTURES of this company. Full particulars, with Form of Application for Debentures, may be obtained of Mr. BUMPUS.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

A complete and reliable List of all the Leading Investments (published on the first of each month) may be obtained free on application to

WILLIAM HENRY BUMPUS, SWORN BROKER.

Office: 44, Threadneedle Street, London, E.C.

BANKERS—The NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

MESSRS. JONES AND HOUSTON, 25, CROSBY HALL
CHAMBERS, LONDON, E.C.
STOCK AND SHARE DEALERS AND
GENERAL MINING AGENTS.

From a personal inspection of the following Mines, we feel confident they will prove the great prizes of this year:—

100 BRYN GLAS	£1 0 0
50 PANT-Y-MWYN	3 0 0
15 RHYDALUN	11 5 0
10 SENTIN	3 5 0

BRYN GLAS.—These shares must shortly command a high premium on the market, and to those who wish to secure an interest an early application is necessary.

BANKERS: London and Provincial.

MR. E. J. BARTLETT, BRITISH AND FOREIGN STOCK
AND SHARE DEALER,
No. 80, GREAT ST. HELEN'S, LONDON, E.C.

Just out, "HOW TO INVEST," post free, One Shilling, Twelfth Edition, enlarged.

WILLIAM GABBOTT, STOCK AND SHARE DEALER,
8, DRAPER'S GARDENS, LONDON, E.C.

BANKERS: The National Provincial Bank of England.

MESSRS. E. KINS AND CO.,
STOCK AND SHARE DEALERS,
14, QUEEN VICTORIA STREET, LONDON, E.C.
BANKERS: Metropolitan.

MR. JOHN BATTERS, STOCK AND SHARE DEALER,
transacts Business in Stock Exchange and Mining Securities.

Special information to Investors in Lead Mines, also in Swedish, Canadian, and other securities.

MR. GEORGE BUDGE, STOCK AND SHARE DEALER
9, GRACECHURCH STREET, LONDON, E.C. (Established 26 years).

ALL BUSINESS TRANSACTED FREE OF ANY CHARGE FOR COMMISSION.

Notice to Investors and Speculators.

Mr. Budge has SPECIAL DEALINGS in—

200 Bedford United, 3s.	50 Gwyn, 7s. 6d.	20 Pandora, 5s. 3d.
25 Blain Caen.	125 Gwyn, 7s. 6d.	80 Rookhope, 4s. 3d.
100 Bodidris.	30 Great Dyffke, 25s. 3d.	100 South Darren.
75 Colorado, £1 12s. 6d.	60 Glenroy, 9s. 6d.	5 So. Frances, £2 1/2.
100 Chapel House.	12 Grogwinlon, £2 1/4.	75 South Tolcarne, 10s.
50 Canada Gold.	60 Herodsfoot.	100 Tamar Silver-lead.
30 Chontales, 9s.	150 Holcombe Valley.	50 Wheel Crebor, £2 6s.
20 Cakemore Ordinary.	70 Hercules and Roe.	20 West Frances, £6 1/2.
110 Don Pedro.	50 Imperial Brazilian	5 West Soton, £1 1/2.
40 Devonport and Tiver-	Colliery.	60 Wheel Cones, 25s. 6d.
ton Brewery.	100 Nouveau Monde, 17s. 6	40 West Holway.
100 East Caradon, 6s.	180 Placerville, £2 4s. 9d.	30 West Wye Valley.
150 Frontenac.	100 Parys Corporation, 9s. 6	

BUYERS or SELLERS of any of the above, or holders of any Stocks or Shares not readily marketable, will do well to apply to Mr. BUDGE.

UNITED STATES AND COLONIAL MINES.

IMPORTANT INFORMATION REGARDING THE ABOVE.
BUYER and SELLER of SHARES at the close Market Price of the day.
SHAREHOLDERS and INVESTORS may rely on all business being punctually and faithfully carried out.

A DAILY LIST OF PRICES sent (free) on application, either personally or by post.

BANKERS: The ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.,

51, OLD BROAD STREET, LONDON, E.C.

BRITISH AND FOREIGN MINES.

SHAREHOLDERS and INVESTORS desirous of PURCHASING or SELLING SHARES in COPPER, TIN, LEAD, GOLD, or SILVER MINES can do so at market prices, and obtain information regarding the same on personal application, or by letter, of—

MESSRS. PETER WATSON AND CO.,

51, OLD BROAD STREET, LONDON, E.C.

Telegraphic Messages punctually attended to.

STOCK AND SHARE MARKETS.

Prices of STOCKS and SHARES in RAILWAYS, BANKS, ENGLISH and FOREIGN GOVERNMENT SECURITIES, GAS, MINES, INSURANCE, and other Stock Exchange Securities, and various important information telegraphed instantaneous from the STOCK AND SHARE MARKETS direct into the offices of—

MESSRS. PETER WATSON AND CO.,

51, OLD BROAD STREET, LONDON, E.C.

From 11 A.M. to 4 P.M. (Saturdays 11 A.M. to 2 P.M.) for the information of customers.

ALFRED E. COOKE,
75, OLD BROAD STREET, LONDON, E.C.
(ESTABLISHED 1853.)

STOCKS AND SHARES,
FOREIGN BONDS, TELEGRAPHS, TRAMWAYS, RAILWAYS, AND
OTHER LEADING SECURITIES.

MR. JAMES STOCKER, STOCKBROKER,
3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
(Established 1848.)

SPECIAL BUSINESS in BRITISH and FOREIGN MINES.

BANKERS: LONDON and WESTMINSTER.

FERDINAND R. KIRK, 5, BIRCHIN LANE,
LONDON, E.C.

FORTNIGHTLY ACCOUNTS opened, on receipt of the usual "cover," in Railways Home and Foreign, Mining Shares, Foreign Bonds, and certain Miscellaneous Securities.

"THE WEEK."—A SEPARATE EDITION from that which appears in the Mining Journal is published every Wednesday evening, containing "Notes and Hints on the Stock Markets," with Closing Prices. May be had on application.

BANKERS: London and Westminster, Lothbury.

NOTICE OF REMOVAL.

MR. THOMAS THOMPSON, JUN., STOCK BROKER,
has REMOVED from 1, Palmerston Buildings, Bishopsgate-street, to
14, ST. SWITHIN'S LANE, E.C.

Mr. THOMPSON transacts business in every species of Stock Exchange and Mining Securities.

Mr. THOMPSON affords reliable information to investors, and can give, when desired, a list of first-class Stocks and Shares, yielding 4 to 10 per cent. dividends upon present prices.

Mr. THOMPSON'S weekly Circular may be had on application.

JOHN B. REYNOLDS, 37, WALBROOK, LONDON, E.C.
Business transacted in all kinds of Stocks and Shares at net prices—prompt cash.

Mr. R. points with satisfaction to his recommendation of WHEAL PEVOR shares at £2 per share, and has special information respecting this mine and WEST PEVOR.

(Established Twenty Years.)

BANKERS—London and South-Western Bank (Limited).

MR. T. E. W. THOMAS, STOCK AND SHARE DEALER,
3, GREAT WINCHESTER STREET, E.C.

Will sell the following SHARES:—

50 Cakemore Coll. ordi-	55 Glyn and Van Consols	50 Penstruthal, 2s. 6d.
nary shares, £3.	United, 10s. 6d.	10 Roman Gravels, £2.
25 Don Pedro, 15s.	15 Great Holway.	30 South Frances, £7.
20 East Van, £1.	50 Herodsfoot, £2 10s	5 Van, £15.
25 East Lovell.	100 Leadhills, £1 12s. 6d.	20 West Peavor, £2 12s. 6

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C.

(Established 24 Years.)

Business transacted in English and Foreign Ralls, Funds, Trams, Telegraphs, &c., at the closest market prices net.

Fortnightly accounts opened on receipt of the usual cover.

MESSRS. J. TAYLOR AND CO.,
MINING ENGINEERS AND INSPECTORS,
36, LONDON WALL, LONDON, E.C.

Have Agents in England, Scotland, Wales, and on the Continent.

FOR SALE, VIKNEBERG SHARES, at 30s. per share.

MR. JOHN L. M. FRASER
(Fourteen years at the Great Minera Mines).

CONSULTING MINING ENGINEER—SECRETARY AND AUDITOR—
ROYALTY AND MINERAL ESTATE AGENT—SHAREDEALER.
MINES, MINERALS, AND MACHINERY BROKER,
GREENFIELD HOUSE, WREXHAM.

From personal inspections can confidently recommend the following Mines for permanent investment:—

BRITISH SILVER-LEAD, 10 per cent. preference, at...	£2 10 0
PANT-Y-MWYN (Mold), at.....	2 15 0
PLAS-DDU (Llanarmon), at.....	8 0 0
BOG 188A (Llanarmon), at.....	5 0 0

A BARGAIN TO BE SOLD.—The lease for 21 years of a valuable SILVER-LEAD ORE and SLATE PROPERTY. Royalty 1-18th. Reports and full particulars on application.

MR. DAVID COWAN,
CONSULTING MINING AND MECHANICAL ENGINEER,
AND LICENSED VALUATOR.

58, BENFIELD STREET, GLASGOW.

Investigations, Reports, and Valuations made of Coal, Iron, Slate, Pyrites, and other properties at home and abroad. Enquiries for Road and Railway Materials, Mining Plant, Pipes, Castings, &c. Plans, &c., of the most modern and economical mining appliances, fittings, and arrangements.

I have been long acquainted with the principal Coal and Ironworks in the North, with the Slate Quarries in North Wales, and for many years was Chief Engineer of the Tamar Mines, Works, and Railway in Spain.

THE "DIFFERENTIAL" PUMPING ENGINE
(DAVEY'S PATENT).

FOR
DRAINING MINES, WATER SUPPLY OF TOWNS, IRRIGATION,
SUPPLYING DOCKS, PUMPING SEWAGE, and GENERAL
PUMPING PURPOSES.

HATHORN, DAVEY, AND CO.,
LEEDS.

HATHORN, DAVEY, and Co. have Patterns of "Differential" Engines of all sizes, from 5 to 500 horse power, and have facilities for supplying very powerful Engines and Pumps at a short notice.

See Illustrated Advertisement every alternate week.

MR. CHARLES THOMAS
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. ALFRED THOMAS,
MINING AGENT, AND STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON, E.C.

"HOW TO TAKE ADVANTAGE OF THE COMING RISE IN PRICES."

By ALFRED THOMAS, 10, Coleman street, E.C.

Will be forwarded to Investors upon application.

MR. EDWARD ASHMEAD, 62, CORNHILL, LONDON,
LONDON MINE AGENT, ACCOUNTANT, AND AUDITOR.

MESSRS. ENDEAN AND CO., 85, GRACECHURCH STREET
LONDON, E.C., STOCK AND SHARE DEALERS.

Established in 1861.

BANKERS: Barclay, Bevan, and Co., and London and Westminster Bank.

Lothbury.

MINING SHARES—BONA FIDE SALE:—

50 CHONTALES, at.....	£0 6 3
50 DERWENT, at.....	0 15 0
50 HERODSFOOT, at.....	2 5 0
50 LEADHILLS, at.....	1 10 0
50 PANDORA, at.....	0 5 6
50 PARYS COPPER, at.....	0 9 0
50 PENSTRUTHAL, at.....	0 1 6

Address, "M. A. B.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

FOR SALE, the WHOLE or PART:—

100 Crebor.	100 Glyn & Van Consols
5 D'Ersby Mountain.	50 Bwlch United.
10 Mineral Corporation.	100 Penstruthal.
50 East Caradon.	20 Gorsedd and Merilyn.
50 Hulfail.	20 Mynydd Gurdud.
50 Hulfail.	3 West Oliverion.

HORNACHOS SHARES.—In a position generally to buy or sell at fair marginal prices.

Address, H. WILKINS and Co., 3, Heybourne Villas, Tottenham.

BANKERS: London and Provincial.

TAMAR SILVER-LEAD AND FLUOR-SPAR MINE.

WANTED TO PURCHASE, 100 FIVE HUNDRED to ONE
THOUSAND SHARES in above.

State lowest price to Mr. WILSON, 7, Cumberland-terrace, Finsbury Park, N

NOTICE OF REMOVAL.

MR. T. HUGHES, MINING AGENT, has REMOVED from
59, Seal-street, to 9 and 10, CAMBRIDGE CHAMBERS, LORD STREET,
LIVERPOOL, where the BUSINESS of the FOLLOWING COMPANIES will
in future be conducted:—

THE PRINCE PATRICK LEAD MINING COMPANY (Limited).
THE GROSVENOR LEAD MINING COMPANY (Limited).
THE VICTOR LEAD MINING COMPANY (Limited).
THE CENTRAL FOXDALE SILVER LEAD MINING CO. (Limited).

MR. W. J. JOHNSON, many years Chief Manager of the W.B.
Lead Smelting Works, having left that establishment in consequence of
the works being now entirely closed, is OPEN to an ENGAGEMENT, or to be
CONSULTED on, or to UNDERTAKE, the ERECTION of PLANT of the most
improved kind; and to ADVISE on the MOST ECONOMICAL METHODS OF
LEAD SMELTING, DESULFURISING, and on FUME CONDENSING.

Address the above, Morpeth.

MESSRS. D. C. DAVIES, F.G.S. AND SON, MINING
GEOLOGISTS, ENGINEERS, AND SURVEYORS, 6, O'WEESTRY, in-
timate that they UNDERTAKE THE FOLLOWING DUTIES in connection
with Metalliferous Mines, Collieries, Slate and other Quarries, Mining Plant and
Mineral Properties generally, at home and abroad.

Preliminary examinations and Surveys.

The Preparation of Plans for Systematic Working, with Supervision where re-

quired.

Periodical Surveys and Writing Up of Plans.

Valuation for Probate, Sale or Liquidation. The investigation of all matters

pertaining to such Properties and Business.

The Analysis of Minerals. The highest references given.

MINING OFFICES,—GOSBOWEN, O'WEESTRY.

SPANISH MINES.—Advertiser is in a position to OBTAIN

SOME VALUABLE GOVERNMENT GRANTS, which will PAY HAND

SOME PROFITS. Parties commanding as little as £100 or £200 may apply.

Address, "Minas," Treviso, Province Santander, Spain.

SPAIN AND PORTUGAL.

MR. J. T. JOHNSON, Assoc. Inst. C.E., F.G.S. &c., CIVIL and
MINING ENGINEER, late of Chester and South Wales, having joined
his Brother, Mr. T. M. JOHNSON, who for the last thirteen years has been
engaged in Mining in Spain and Portugal, is prepared to INSPECT PROPERTIES
and CARRY OUT GENERAL MINING AND ENGINEERING WORKS in
those countries.

Address: CORREIO DO CORVO, PORTUGAL.

PIERCE S. HAMILTON, PRACTICAL GEOLOGIST,
SURVEYOR, AND MINING ENGINEER AND AGENT, OFFERS
HIS SERVICES in either of these capacities to those interested or desirous of
investing in MINING PROPERTY in the PROVINCE of NOVA SCOTIA or
elsewhere in the DOMINION OF CANADA.

Having for years filled the administrative position of Chief Commissioner of
Mines for Nova Scotia, and having both before and afterwards been himself
largely engaged in Mining operations, Mr. HAMILTON has had exceptionally good
opportunities of informing himself as to the variety, extent, and character of the
mineral deposits of that Province, and as to the most economical and effective
methods of working them.

ADDRESS—PIERCE S. HAMILTON, HALIFAX, NOVA SCOTIA,
DOMINION OF CANADA.

THE CANADA LANDS AND LOAN AGENCY,
39, WELLINGTON STREET EAST, TORONTO, CANADA.

Will afford gratuitously to correspondents all information, as to advantages of
Settlement for Farmers with means to purchase Freehold Farms, or to Gentle-
men and Private Families, giving Cost of Property, of Living, Educational Ad-
vantages, and Opportunities for Advancing Young Men in Professions or Com-
mercial Pursuits. Also inducements to Skilled Mechanical Labour, Manufac-
tories, and other Industries. When correspondence leads to settlement or business,
a moderate compensation will be payable to this Agency.

MONEY INVESTED AT EIGHT PER CENT. PER ANNUM.

Payable half-yearly, on first mortgage of Good Farms, well situated and im-

proving, worth double the amount at a forced sale. English references when re-

quired.

N.B.—Responsible parties in England and Scotland, desiring agencies there,

paid by commission, will be supplied with pamphlets and maps, list, and cost of

farms, town properties, mineral lands, and manufacturing and other industries

new offering, on applying with references as above.



PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for
Steam-Engines & Boilers, also the Special Steam Pump,
with Holman's Condenser & Compound Pumping Engine.



TANGYE BROTHERS AND HOLMAN,

HYDRAULIC AND GENERAL ENGINEERS

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS SOHO.

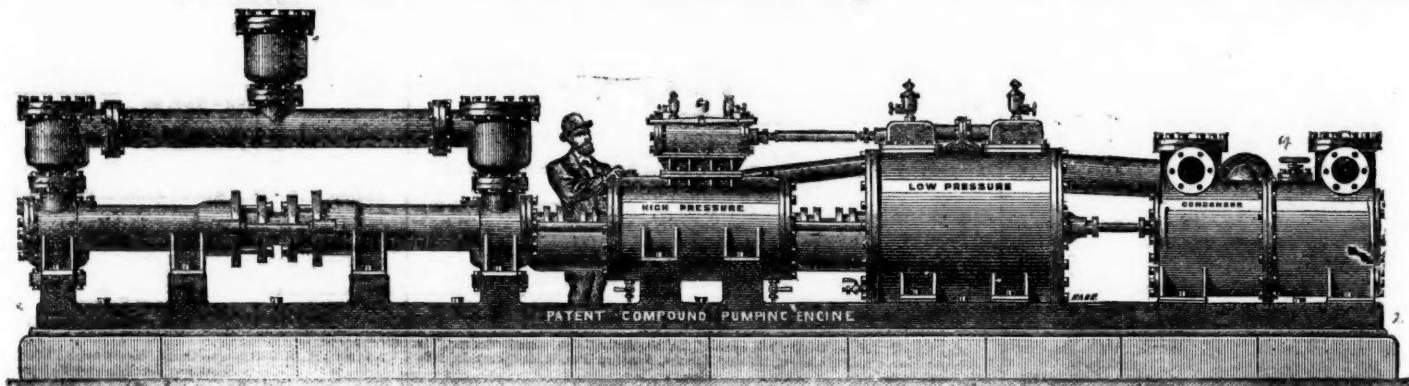
THE "SPECIAL"

DIRECT-ACTING

COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,

And all purposes where Economy of Fuel is essential.



THE "SPECIAL" DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

After several years of successful application for all purposes to which steam-driven pumps can be applied, THE "SPECIAL" STEAM PUMP STILL MAINTAINS THE FIRST POSITION IN THE MARKET, notwithstanding that it alone—of all direct-acting pumps—has been subjected to the great variety of severe tests that must be encountered in such a period of time. Some valuable improvements have been suggested in the course of a long experience, and their adoption has rendered the apparatus at once

THE SIMPLEST AND MOST CERTAIN IN ACTION.

The illustration shows an extension of the principle of this Pump to a Compound Steam Pumping Engine, by which the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere. The Engine combines simplicity, certainty of action, great compactness, fewness of parts, and consequent reduction in wear and tear.

Several thousands of the "Special" Steam Pumping Engines, with high-pressure cylinders only, are in use in British and Foreign Mines, Water Works, &c.,—and for confined situations, or where Engines of a comparatively small size only are necessary, they will still meet all requirements—but their application will be very largely increased, since it has been found practicable to embrace the important features of expanding and condensing the steam, so that increased power may be obtained, and the consumption of fuel greatly economised.

THE "SPECIAL" DIRECT-ACTING COMPOUND STEAM PUMPING ENGINE is the most simple appliance for deep mine draining and general purposes of pumping ever practically developed, and the first cost is very moderate compared with the method of raising water from great depths by a series of 40 to 50 fathom lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pit-work are required, while they allow a clear shaft for hauling purposes.

SIZES AND PARTICULARS.

	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Diameter of High-pressure Cylinder.....In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder.....In.	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder.....In.	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke.....In.	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate.....	3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Diameter Suction and Delivery.....In.	3	3½	4	3½	4	5	6	4	5	6	8	5	6	8	9
Diameter High-pressure Steam Inlet.....In.	1½	1½	1½	1½	1½	1½	1½	2½	2½	2½	2½	2½	2½	2½	2½
Diameter Low-pressure Steam Exhaust.....In.	1½	1½	1½	1½	1½	1½	1½	2½	2½	2½	2½	2½	2½	2½	2½
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder.....	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	306	335	600	440	337	216	600	459	203	203

CONTINUED.

	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Diameter of High-pressure Cylinder.....In.	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder.....In.	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder.....In.	8	10	12	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke.....In.	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate.....	15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	47,950
Diameter Suction and Delivery.....In.	6	8	9	10	6	8	9	10	8	9	10	8	9	10	10
Diameter High-pressure Steam Inlet.....In.	2½	2½	2½	2½	3	3	3	3½	3½	3½	4	4	4	5½	5½
Diameter Low-pressure Steam Exhaust.....In.	5	2	3	3	3½	3½	3½	3½	4	4	4	5	5	6½	6½
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder.....	360	230	160	118	456	292	202	149	397	276	202	518	360	264	562
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	864	600	440	937

PRICES GIVEN ON RECEIPT OF REQUIREMENTS.

Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work of one Pump to any extent.

NORTH OF ENGLAND HOUSE
SOUTH WALES HOUSE...

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES.*—No. CXXIV.

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SECTION IV.
OVERSTOPPING.

Hitherto we have only spoken of the working as being carried on on one side of the "breaking in," but it is evident that the right side can be attacked in the same manner. In the first case the stoping would be said to be one sided, and in the latter case double sided. Where the breaking in is sufficiently long to make it convenient the two lower corners may be commenced simultaneously, and the corresponding stopes on both sides of the breaking in, or rise, would follow in the same succession as given in the last lecture, and would be worked simultaneously. On the other hand if it is inconvenient to have the uppermost stopes on both sides, opposite each other, then the workings on the one side can be carried on somewhat in advance of those on the other.

It will be evident that the work of breaking in, which we have described as the commencement of this mode of working, is in itself simply the driving of a shaft in the deposit in an upward direction, and that it is immaterial to the actual working out of the deposit whether this shaft be far advanced or not before the actual stoping commences. In many cases it is usual to place the shafts connecting the levels much closer together, and to commence stoping away from the bottom of one of these shafts. In Cornwall the levels are usually driven every 10 fms. apart, and the levels connected with rises or shafts every 15 fms., which thus divides the lode into large rectangular portions, 15 fms. long by 10 fms. in height. The stoping from a shaft has the advantage of stoping from a breaking in—1. That the ventilating current rises uninterrupted to the level above, and consequently with a much greater velocity through the ascending stopes and shafts when the stoping proceeds from a shaft; whilst in the second case the current, after having reached the highest stope, must then descend; an arrangement which checks the current, since the warm air from the stopes on both sides tends to rise to the highest stopes, and to remain there. This disadvantage is of still greater importance in the case of highly inclined coal seams, such as are found in some districts of France, Belgium, and Prussia.

2.—That all tools and materials which are required in the higher stopes that can be lowered down the shaft to the highest stope, and then handed down to the lower ones, instead of having to be drawn up from the level into the stopes.

In many if not most cases more rock will be loosened than mineral; the former containing little or no mineral is thrown behind or under the feet of the miner, whilst the latter is sent to the surface. It is evident that some special means must be resorted to to keep open the level beneath, and in the case of a deficiency of suitable material for building round the winze the latter also will require support. This is effected either by means of timbering, masonry, or leaving a suitable height of rock intact immediately above the level.

1.—The first method by means of timbering is called by the Germans "Finstenka-ten." This consists of forming the roof of the level by inserting stempels between the hanging and lying walls, as the rock roof is worked away by the lowest stope. The cross stempels are placed nearer together or further apart, according to the expected weight, and are covered with covering wood, placed longitudinally. On the top of the covering wood a layer of small rock is first spread, and then larger pieces, the attle being afterwards thrown down indiscriminately, except at the face of the attle packing, for which the larger pieces of attle are picked out, and built up as dry walling, which prevents the attle being gradually pushed down, or giving way beneath the feet of miners travelling over the face of the attle stopes. This method is that principally used in the Hartz mines. In other districts, where wood is comparatively dear, the durability of timbering, which lasts for eight to ten years, is of importance in deciding whether to resort to this or the other methods of supporting the roof of the level.

2.—When masonry is used it is generally built as an arch, for which in some cases the country rock is used. The details of this and the above method have been discussed in detail in the last section.

3.—The third method of leaving a suitable height of rock intact (a safety pillar) is chiefly resorted to where the lode is of considerable width, and where the pillar thus left does not contain a great amount of valuable ore. This safety pillar is formed by commencing and driving a level at the proper height above the main level, which is carried 4 or 5 yards in advance of the first (lowest) stope, and connected every 20 to 25 yards with the main level below, above which the short shafts (so called "Rolle," or "Pass") built in the attle packing are placed, through which the ore is thrown down into the main level. The thickness of the safety pillar varies from 3 to 6 ft., or more. The weight which has to be borne by the roof of the level is always less than that of the attle above, since in the case of slightly inclined lodes a great part of the weight is carried by the lying wall; the friction of the mass against the walls of the lode, and when some distance has been worked out the pressure of the two sides will squeeze tight the attle packing between them, and thus diminish the effective weight on the pillar. When the water of the mine is ferruginous, and this percolates through the mass of attle, oxide of iron is precipitated, and cements the material together. A still better method of keeping the main level open is to drive it in the country rock, parallel and near to the lode, which is reached by short cross-cuts, a parallel level being driven in the lode next to the lying wall, generally simultaneously with, or slightly in advance of, the main level. By placing the level close to the lying wall the "Rolle," or "Pass," when carried up vertically, will be of greater length before the mouth of the "Pass" reaches the hanging wall; the greatest possible length of the "Pass," when it is required to keep it vertical, gives the vertical height between the adjoining levels.

The general form of the stoping will depend on the proportion between the length of the roof and the length of the face of the stopes. For the latter (the height of the working face), the convenience of the workmen is the deciding factor, the height being that up to which the miner can conveniently reach with drill, 5 ft. being the minimum. When the height is made to suit two men a height of 10 ft. will be general; this, however, will require the use of some simple scaffolding, or "bunning," to reach the roof close to the face; and as the scaffold will require to be removed every time a shot is fired and replaced, a loss of time is occasioned. When a scaffold is used the height may reach 12 ft. High stopes have the advantage that the mineral can be loosened in greater masses, but they are inconvenient for the miners to work in, comparatively more dangerous and difficult properly to inspect. The less the height of the stope, and the shorter the length of each stope, so much the greater will be the number of stopes that can be got in between the two levels; in other words, so much the greater will be the number of working places and consequently so much the greater the production. Even when the stopes are made so large that two miners can work at one face, still the advantage will remain with the shorter stopes, since generally two miners in two stopes will do 12 to 15 per cent. more work than two miners in one stope. The chief disadvantages of very short stopes are that the workmen are inconveniently near when the shots are fired, and the mineral has to be transferred over several stopes to the nearest winze, or pass, and that it is difficult to avoid loss of ore. The best height appears to be 6 to 6½ ft., with a length of 7 yards, the length varying generally from 6 to 12 yards. Lottner gives as a general

rule that the ratio of the length of the stopes to the height is as 3 to 2, though it often reaches 4 to 1.

The direction of the jointage of the country rock, or of the lode itself is of importance in stoping. When the stoping is carried on only on one side of the winze it is best to carry the stopes forward in the direction opposite to the dip of the jointage, so that the joints dip downwards towards the working face. When the stoping is double sided, that carried forward in the opposite direction (in the direction of the dip of the jointage), it will require timbering to keep it safe, since the ground will be liable to break off along the lines of jointage. In this case the attle should be packed more carefully, and occasionally the larger pieces should be piled to form dry retaining walls, so as to give a better foundation for the timbering, which in the simplest case will consist merely of upright props, with foot and lid. When the vein is very jointy, and the lode comparatively wide, so that the whole breadth of the lode cannot be kept, it will be necessary to support the roof with long cross bars held up by vertical props. Where the lode is pretty wide the props will not be placed close to the side, but more towards the centre, about 3 ft. 6 in. to 5 ft. wide between them, and from 4 to 8 ft. apart. The attle will be thrown on each side behind the row of props, till it is packed close up to the roof. In order to prevent the attle from falling in between the props the larger pieces are built up as a dry wall, and in order to make them strong, to resist the pressure of the small loose attle behind the wall is formed curved, with the convex side next the loose attle. The props, and the upper 12 to 18 in. of attle packing, are removed 3 to 4 yards at a time as the next stope above follows, the centre portion being filled up level, and the walling and packing carried up to the roof of the next stope. In some cases, where timbering can be dispensed with, and the two side dry walls carried perfectly straight, cross walls are built from the side walls to the sides of the lode, the loose attle packing and walls are carried up to within the last 2 or 3 ft., which is built up with large flat pieces, obtained either from the lode or country rock. These flat pieces are removed every 3 to 4 yards in advance when the next stope is being got.

The mode of stoping carried on at Příbram, Bohemia, is that from both sides of the winze. A safety pillar from 8 ft. to 10 ft. in thickness is left above the main level, a pass being put through the pillar every 20 to 25 yards. The stopes are carried 10 ft. high by 12 ft. long, the attle packing following the face of the stope at a distance of 10 yards to 13 yards, the workmen standing on a scaffold formed of longitudinal planks laid on the cross stempels, the planks and stempels being removed previous to the packing of the attle, since they would otherwise be buried. By this arrangement the freshly won portions of the lode are kept separate from the already sorted attle packing, and less of the smaller particles are lost, the worthless vein stuff being packed under and close up to the scaffolding above. In other districts, where the ore is of a high intrinsic value it is customary to spread boards on the attle beneath the working places, and to cover them with a cloth to catch all the small particles. The boards are sometimes dispensed with, the ground on which the fresh ore and vein stuff falls being covered with leather, linen, and in some cases the dry retaining wall of the attle packing is puddled. Where the vein stuff is of a fine, loose, earthy nature this may be carefully spread over the rougher or larger portions of the attle, the retaining wall of the attle packing being kept well back. The top half inch or inch of the fine attle which forms the surface on which the valuable ore falls may be scraped up and filled, the extra value of the mineral making it worth the expense of dressing to obtain the loose scattered particles.

In the Teesdale Mines, where the lode is from 20 ft. to 24 ft. in width, the lode is taken out in a series of overstopes of the full width of the lode, timber being used temporarily in the stopes. The greater portion of the vacant space is packed with waste obtained from a blind level driven into the country rock; the entrance and part of the level next the lode being kept open with timbering. The end of the level is enlarged, so that the roof breaks in, and forms a kind of self-acting quarry. The whole of the lode is not got out, ribs being left in beneath each level, which thus divide the mine into a series of rectangular chambers. The under side of the ribs are formed concave. The levels are driven on the lying side in the lode, but not of the full width.

In flooken lodes—i.e., such in which the outside of the lode (immediately between either wall of the lode and the lode itself) is formed of a band of earth or clay, the flooken (Ger. Schlamm), it is sometimes usual in working the lodes to detach the vein at one side first, and by means of one or two judiciously placed shots to bring down the rest of the lode off to the flooken. This mode, although cheaper, is somewhat attended with risk to the men.

In the iron pyrites mines in Wicklow the same plan is followed, as in the Teesdale mines, of forming the lode into a series of chambers by means of ribs; the timbering and ribs, however, are removed, allowing the lode to crush in.

IMPROVED BEEHIVE COKE OVENS.

The new bank of 100 beehive coke ovens constructed at Bennington Shaft Colliery, near the Allegheny Tunnel of the Pennsylvania Railroad, is fully described by Mr. John Fulton, M.E., in the American Coal Trade Journal. The bank of ovens is 750 ft. long, with ample wharf and railway siding on each flank. A large dump has been erected, in connection with the shaft tower of the mine, capable of holding three days' supply of coal, and of sufficient height to discharge its coal into larries on trucks underneath. These larries receive 5 tons each, and discharge it through their hopper into the coke ovens. Many valuable suggestions were obtained from gentlemen engaged in the Connellsville coke trade, who afforded the writer every facility in the most cordial manner of studying at their extensive coke works the requirements of ovens as indicated by the work and experience of many years. The Bennington coke ovens are placed in a double row, enclosed between two strong retaining walls of sandstone masonry. Between these walls and up to the level of the floors of the ovens the space has been carefully filled and compactly rammed with clay and loam, constructed in horizontal layers of 12 in. each. Under all an ample drain is laid longitudinally under the bank of ovens. The ovens were founded on this thoroughly packed filling, having a fall in their floors towards the doors of 6 in. to each oven.

Experiments showed that with the same coal coking in pits or mounds gave 59 per cent. of coke, and the loss of carbon was 22 per cent.; in beehive ovens gave 65 per cent. coke, and 9.7 per cent. loss of carbon; and in Belgian ovens 70 per cent. of coke, and a loss of 8 per cent. of carbon. The pits or mounds are the slowest in time and the most wasteful of coal. The beehive ovens make the best and driest coke, but are not yet so economical in their work as the Belgians. In time of making coke they are about equal. The actual cost of making coke per ton by these methods at present cost of labour, including interest on investment in ovens, is in pits or mounds 70½ cents, beehive ovens 35 cents, Belgian ovens 33 cents. In this stage of the investigation of the methods of making coke for blast-furnace use it is important to bear in mind that the imperative requirement is the production of the best quality of coke for furnace use. This must be the prime factor in all successful coking operations. The mere effort to save a few units of carbon in the coking, to waste a great many in the furnace, besides reducing its product, seems to be only trifling with a very important industrial question. In considering this question Mr. Fulton makes an unfair and useless comparison in order to show that his ovens are the most economic. He states that to make 100 tons of pig-iron it required 180 tons of mixed Belgian and pit coke and 122 tons of beehive coke. As he gives no figures it must be assumed that the Belgian and pit coke were mixed half and half, and thence it follows that he spoiled the Belgian coke by the rubbish he put with it in order that the result might be lower than that of his own coke. He shows that his beehive coke is 9.7 per cent. worse than what, for the sake of comparison, must be called standard Bennington coke; whilst Belgian coke is 8 per cent. worse and pit coke 22 per cent. worse. The mixed coke would thus be 15 per cent. worse than Bennington standard, and it follows that if 180 tons of the mixed coke made 100 tons of pig-iron, the beehive coke not being conta-

minated with the pit coke, would had such beehive coke been as good as the Belgian coke have made the 100 tons of pig-iron with about 117 tons, instead of 122 tons, so that the Bennington beehive coke cannot be recommended where economy is to be considered.

There can, consequently, be no doubt that Mr. Fulton's conclusions are based on false data, but it may be placed on record that he says that careful investigation of the several methods of coking indicates very decidedly the superior value of the beehive plan. It seems to be pretty clearly made out that this is the true fundamental principle of coking. In this connection it may be asked why cannot coal be coked with as little loss of carbon in the beehive as in the Belgian or Appolt plan of ovens? The correct reply to this would disclose the true line of progress demanded in beehive ovens. The production of the best possible furnace coke with the least possible waste of carbon. It is evident, he says, that a great waste of heat is induced in the present plan of beehive ovens. The only surprise is that the system is not much more wasteful. The heated products of coking are driven directly out of the oven through the charging holes into the open air. The Belgians, on the other hand, are enveloped in flues and ports, utilising as much as possible the heat evolved in coking. Their rapid system of discharging the coke retards the work of the oven very little, whilst the beehive, quenching its coke in oven, is much cooled by the operation, besides a loss of time in drawing the coke of two to three hours. Yet under all these disadvantages he thinks that the beehive ovens will make coke of a better quality than the Belgian or Appolt ovens.

THE MINERAL RESOURCES OF THE DUTCH EAST INDIES.
No. III.

The volumes of the Jaarboek for 1878 contain a considerable amount of additional information of interest to those connected with the tin trade, an abstract translation of which will presently be given. The first contribution is an account by Mr. J. A. Hooser, M.E., of an examination of the drinking water obtained by artesian pits (drinkwatervoorziening) at Groot-Atjeh, on the north coast of Sumatra. In this much valuable information is given as to where the water can be best obtained, and as to its quality. This is followed by another memoir by the same engineer on the technical execution of the borings. Both are accompanied by plans of the surface, showing the distribution of the water when obtained, and sections of the strata passed through. The report of the Pangkal-Pinang district is followed by the second, third, and fourth treatises on the Palaeontology of the Dutch Indies, the former in German by Drs. von Geinitz and March on the geology of the west coast of Sumatra, and on the fossil fish of Sumatra, and the two latter in English by Mr. H. B. Sary, F.R.S., on some fossil foraminifera from the west coast district, Sumatra, and by Dr. Albert Günther, V.P.R.S., contributions to our knowledge of the fish fauna of the highlands of Batak, Sumatra. The first volume concludes with the completion of Mr. Verbeek's account of the geological reconnoitring expedition through the Lampong districts and part of Palembang, in which he refers to parts which had not been visited when the principal treatise already noticed was written. The memoir, however, of most interest to the readers of the Journal is that of Mr. J. H. Cordes, M.E., on the Pangkal-Pinang district in the island of Bangka.

It appears that the topographical, geognostic, and mining survey of the Pangkal-Pinang district was commenced in 1870. Even from the first it was necessary to grant assistance to many men which either required new working ground, or whose resources had become unreliable. This help took the form of a premium, and hence requests for assistance were continually more numerous. By that means more or less extensive explorations were made in the districts of Soengeiselan, Merawarig and Soengeilat. It will thus be seen that with a small, continually varying, and to a great extent inexperienced overlooking staff, the largest amount of attention was secured for the mining survey, and as a rule also the whole of the working power was utilised. The geognostic survey had, under the circumstances, had the most to bear, and so much the more because it related to a district where the solid rock only came to day in a very few places, and where neither natural nor artificial cuttings of the surface were met with, so that the laying bare (blood-gging) of the rock was absolutely necessary, and required moreover time and means. The principal results of the business in this district are the numerous boring details, with the accompanying and ample maps of the ore-producing valleys. They were not, however, surveyed on account of their extent, but they present the most practical portion of the whole work, and were deposited in the archives of Bangka, where they are intended for daily use, and to serve as guides for the further working of the district. From October, 1874, to August, 1875, the works were carried on under the mine engineer Birnie, and after that date under Mr. Cordes. The first chapter of the treatise mentions the manner in which the map was prepared, and there are then descriptions of the natural position of the geognostic and mineralogical characters of the district, and these are followed with a detailed description of the tin producing valleys.

In the chapter on the mineral resources of the district it is mentioned that only a few are met with which are worthy of notice. Concerning the manner of the occurrence of the tin ore in the solid rock, reference may here be made to the explorations near the Solinta hill, which have already been reported upon. Later nothing has been ascertained with respect to it. The explorations in the Pangkal-Pinang district confirm the opinion which had already been formed that the tin ore is most found in the neighbourhood of the boundary between the granites and the sedimentary rocks. The ore deposits were followed in the different valleys, until they were no longer of any importance. And if one then unites the points exactly where the operations were stopped, a line is obtained, which runs at about 4½ kilometres from the boundary of the granites. Beyond the limit of this line then nothing has been done. It appears also by repeated trials that it is not exactly in the granite itself that the richest ore deposits are met with. As an example, reference may be made to the Baik brook, which flows into the Langir, and further runs entirely between the granite hills, but is nevertheless almost entirely oreless. Again, the highest mountains by no means indicate the richest accumulations of ore. The Langkap brook (the Pedindang river) contains scarcely any ore, and it is only in the lower lying part below the village of Trak that it can, by a large mine, be obtained. The overlying ore ground formerly worked here was, however, very rich. Especially in the Messoe valley rich in valley and superficial ore ground which apparently proceeds from the Laddigroep. This valley is then the meeting place of the different prosperous mines. The valleys Batgan and Gemoeroe, which lie to the southward of the Laddigroep hill, have likewise at different mines yielded good profits.

The occurrence of gold is only known in the Kajoe-Bessi valley, near Cape Bonga, where it must have been formerly found near the inland head, Mindim. It was, however, not discovered in the sandstones which occur at the place where it is at present found. However, it is possible that here, just as in a few other places in Bangka, a little gold might be met with. Iron ores are amply represented in the numerous ferriferous clay band, and in the limonite, which occur at different places. But never do the iron ores occur so clean and in sufficient quantity that the working of it could be thought of. Manganese ore occurs in some of the sandstones, as in those near Tjinkong Abang. It should also be mentioned that psilomelan was found near a working in the Kleidang river. B-sides existing on the Solinta hill, where it occurs with tin ore in the solid stone, wolfram ore was also found in the "Brokiet Solinta," and in small quantity with the tin ore in the Pedindang river.

The Mundo river forms the boundary between the districts Merawang and Soengeiselan, and divides itself into two branches, the northern of which is called the Mundo, and the southern the Mangas. The Mangas, which forms the boundary between Pangkal, Pinang, and Soengeiselan, has already been described in speaking of the last named district as almost entirely without ore. The Mundo takes higher up the name of Koerok, but the upper part

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergsrath Dr. von Gronow, Director of the Royal Bergakademie, Clausthal, The Hartz, North Germany.

contains only very small deposits of ore. In the little valley of the Penjerang only traces of tin ore were found, but on the height where the road to the Litjin hill cuts the valley, a few good specimens of ore (ertsmonsters) were obtained with the hand boring tool (sreekboor), which, however, were not sufficient to justify further search with the large borer. At the Troe brook explorations gave a satisfactory produce, so that a working in this valley is recommended. The valley of the Dinding-Papan brook has long been worked. No. 48 mine, Nihok, was worked there until its suspension in 1842; later on the ground was worked by private parties, but nothing remarkably rich was found; this further examination also showed that the ore occurred very widely spread. The Pangkal Pinang river separates near the chief place of the district into two branches, called respectively Pedinding and Rankwee. They were both carefully examined whilst above the tributary branch Koedjoet; the first is with respect to its ore produce worthy of mention. The Pedinding river, near to its source takes the several names of Soengei Besar, Bakong, or Langkap. And looking at the appearance among the hill tops, and considering the richness in ore of the Poepoet valley, in the Soengeiselan district one is led to the hypothesis that in the Pedinding valley a rich mineral district will also be found; this is, however, shown not to be the case. Even long before boring operations were resorted to the Pedinding valley was explored by means of pits. It appeared, however, that the produce thus obtained from the stuff led to the supposition that regular working was not justified. It was in the year 1864 that boring operations were first commenced in this valley, and the excellent produce obtained in No. 13 mine, Manhin (now called No. 7, Ajer Nangka), near the upper part of the valley. At the time of the commencement of the great waterworks in the principal valley the still unworked part of the little valley Bakong was operated in connection with the mines mentioned, and the first pit in the principal valley was commenced in 1869. Since that time this mine has been successfully worked. The Pedinding valley is not yet explored over its whole extent, but the No. 7 mine alone may be relied on for a number of years. The great irregularity in the distribution of the ore makes it necessary to continue the boring, and just, therefore, was it considered desirable not to carry on the exploration further, when the run of ore was sufficient for half-a-score of years. Further explorations for ascertaining the extent of the valley deposit and the depth of the ore body, which will require much time and working force, can hereafter be undertaken, and can then be followed by immediate working, and thus they would be better able to keep within the bounds of the deposit, whilst this exploration might also possibly lead to a new arrangement of this mine with regard to working a larger quantity of ground. The No. 7 mine can procure an extraordinarily large quantity of water, which above all things, from the position of its ore body, is of great importance, whilst should the greater part of the water be drawn off then it would be an immediate calamity to the mine. The sides of the principal valley have in many places been rich in steam stuff or superficial ore (bovenlagaherts). About 1½ kilometres from the chief town Mine No. 1, Sini or Lalang, is worked, which was afterwards carried on near the Lalang Valley. Mine No. 55, Marsing or Olim, was worked near the mouth of the Olim, not far from the village of Betoor. The little valleys of Bindjai, Betoor, Lalang, Tjenai, Olim, and Mangis, which lie in the stream stuff district, contain no ore.

Near the source of the little valley of the Pau brook is a small surface working; it contains a little ore, but it is only over a very small extent that it is worth working. Along the left side of the Pedinding a little surface ore ground occurs, and near the village of Trak No. 6 mine, Manho (Bakong) some kaolin ground was very profitably worked. The Nek and Kaja Brook valleys contain only traces of tin ore. The lower part of the valley of the Seroe Brook still contains ore, whilst the upper part with the high banks have already been worked out through No. 53 mine, Songhap. A little ore was met with near the mouth of the little brook Sambong-Tjorong. A little dust-fine ore was found by boring in the Baik Brook, and on the left bank a superficial deposit was formerly worked as No. 8 mine, Jonghin (Langkap). Above the Rankanang hill, between Troe and Broesa, there was formerly a working, but it was stopped owing to the poverty of the ground. Near where the River Raukwee takes the name of Ajer-Nangka the mine of this name (No. 7) was formerly worked, as already mentioned. At first superficial ore ground was worked in the principal valley and its tributaries, as well as in the little valley Rienjong; and afterwards a pit was opened in the principal valley, but no profit was secured, so that in 1857 a debt of 8425 fls. had to be written off. In 1862 another attempt was made, but the debt was raised to 8851 fls. It was reconstituted with a new set of adventurers, but nothing satisfactory was done.

The River Koedjoet, which is called the Kleidang at its upper part, was for a long time unfavourably known. No. 3 mine (afterwards called No. 2 B) was long worked in the valley below the old road to Koba, and the superficial ground was successfully worked in three different places, and some very good specimens were obtained; the workings, however, were always of little importance, whence they were suspended in 1875. The mine No. 2 Thajhin (now No. 1 Kleidang) is the only one in the Koedjoet valley in which a pit has been sunk; it gave the most promising indications for the present workings. In 1840 the first pit was opened about 100 metres above the old road to Koba; it gave, however, only specimens. It was thought operations had been begun too high in the valley, and therefore a pair of pits were sunk below the road near the village of Ajer-Iam, but in almost every place there was an utter absence of ore. From 1838, when the valley workings were commenced with 43 partners, to 1842 this mine produced only 83 peculs of tin, and it remained afterwards for a long time in debt, notwithstanding that 23,695-72 fls. was written off in 1849, and 5000 fls. in 1858. In 1862 the mine first began to come into luck and to lessen its debt, but it was only after the borings in 1869 and 1872, of which the last was carried on over the whole valley, that the mine came into its present favourable condition. This workable part of the valley is discovered, and it can be with certainty predicted that when the mine is worked within the existing boundary, and although it was formerly a barren and was several times on the point of being stopped, it will prove to be one of the richest mines in the district. The only thing which stands in the way of its prosperity is the small quantity of water which it can command. Some improvement might, however, be made in this, for the water distribution in this valley might be arranged. The writer recommends the works to be carried out. Explorations in the little valleys of the brooks Kebak, Kleidang, and Antong discovered no ore.

The Lantei brook, which is so called, near the hill, and takes the name of Kemiri in the lower part. During a considerable time this valley was the workplace for No. 10 mine Sjinho (afterwards called No. 9 Kemiri), which opened its first pit in 1843 near the union with the Penet brook. It was necessary in 1850 to write off 2485 fls., and after paying cost for a few years it became requisite again through too many miners being employed to write off another 5947-45 fls. And as in the year 1862 there was still another debt of 5527-13 fls. to write off it was thought they must be working beyond the boundary of the ore deposit. This was confirmed by exploration, and near the mouth of the brook a small piece of workable ground was found. The mine was, however, ultimately combined with the Kleidang, by which a further debt of 1228-88 fls. was taken over. The Kleidang Mine afterwards opened a pair of pits in the lower part of the Lantei, yet this is the only profitable working in the Kleidang valley. Above the old pits of the Kemiri Mine in the Lantei a few scattered and not very rich ore accumulations have been wrought by private persons. With the hand borer ore was found in the Tjelok brook, but it was too much disseminated to justify trials with the large borer. A very little ore was found about 500 metres from the mouth of the Iboel brook. No ore was found in the little valleys formed by the brooks Klobi, Riending, Tauwar, Boengkoan, Mesabong, &c.

Between the rivers Kleidang and Krassak some rich ore grounds occur which are worked by No. 10 mine Djoeli (now No. 4 Kebak) and No. 5 Tjini (now No. 4 Krassak). The first named mine has worked since 1841 two locations. It acquired, by taking over a

debt of 2200 fls., the right to the ground of No. 4 Soenghin Mine, where it has now its upper working place. It yielded in 35 years 10,461-34 peculs, or averaged nearly 19 peculs per head per year. The upper part of the Passir-Paddi valley is called the Krassak. This valley is of great importance for mining explorations. Although a pit was never opened in the valley, yet there stretched through it an ore deposit more than three kilometres long. The ore deposit is somewhat irregular, but the average width of the ore course is 60 metres, whilst the average depth is 6 metres. The ore course cannot be called particularly rich, but formerly the mine had a high reputation, but now it is only a very moderate mine. By the continual working away of the rich ore ground the location has become less attractive, and some parts have been altogether worked out. The Krassak does not take its rise on a hill top, and has, moreover, no important tributaries, so that its watercourse is unusually small, yet its water might serve for the little mines (mijntjesmines) Nos. 5, 11, and 12. The Itambrook was found to be useless, but its water is utilised for the Batjan Mine. In the valley of the Poepoet brook a coudle of ore deposits exist which can be worked simultaneously with the principal valley. No ore was found in the Koedoc and Tombok-Dalam brooks. Along the right bank of the principal valley stretches the workable location of No. 5 mine Tjapi (now No. 3, Laka), which has always been very profitable. In 35 years working, with 18 men on the average, it has yielded 10,843-19 peculs, or 17 peculs per head per year. The No. 6 Pedada Mine has yielded a less satisfactory produce, through lack of water. The water above the storage dam, near the chief building of Laka Mine, is used by this mine, whilst the reservoir near the Tombok-Dalem Brook belongs to the Krassak Mine, which takes it to its working places near the old road to Koba, from where the Poepoet valley comes back into the Krassak. The Pedada Mine can also use this water from above the dam and near its smelting-house, but it cannot be taken up high.

The River Kaje-Bessi rises in the high ground in the neighbourhood of Cape Bonga. This valley contains very little tin ore, but it has obtained considerable renown, because formerly gold was found in it. No ore was found in the Nesat brook valley, but a little superficial ore was found in the neighbourhood. The River Pedada was explored over its whole length, and found to be useless. The Parit Laut brook valley is of very little importance. Between this and the Mesoe a superficial ore deposit was formerly worked, and there is still a private mine working. The Kebinti brook contains no ore. The Trentang brook valley itself contains no ore; but on the left bank No. 25 Tjoenghin Mine (now No. 14 Trentang) has been worked from time immemorial, which, however, has always yielded a low produce. A storage dam in the lower valley serves for the working of the Kebinti Mine. The valley of the River Mesoe will be next noticed.

Meetings of Public Companies.

THE CARDIFF AND SWANSEA SMOKELESS STEAM COAL COMPANY.

The ordinary annual general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Thursday, Mr. P. P. MOSLEY in the chair.

Mr. JOHN DAVIES (the secretary) read the notice convening the meeting, and the minutes of the previous meeting, which were confirmed. The report and accounts were taken as read.

The CHAIRMAN said he had a few remarks to offer to the shareholders before asking them to formally adopt the report and accounts. Since their last general meeting, in last year, contrary to the expectations of most of them, and certainly to the hopes of everyone connected with the coal trade in England, the state of that industry during the last 12 months had not only shown no improvement, but it had gone from worse to worse, and prices had materially declined for their description of coal. In many districts coalowners had found great difficulty in disposing of their produce, even at the ruinous prices which existed. He was in frequent communication with coalowners in various districts, and it was his unanimous opinion that the state of the trade was worse now than it was twelve months ago, and it was impossible to say how soon things will mend; but among the people best qualified to form an opinion on the subject there was a feeling of very strong confidence in the future, and many people were expending enormous sums of money on colliery properties—which was an evidence of their confidence in them. He alluded to these circumstances to point out that the result of the operations of this company for the past year compared very favourably with many similar concerns which had made very heavy losses. In some cases colliery owners had been obliged to close their works and pits altogether. He thought that the balance-sheet of this company, although it showed a loss on the working, would give a small amount of satisfaction to the shareholders. Some of the large shareholders who were unable to attend the meeting had written to congratulate the directors of the company on the result of the year's operations, as they had anticipated in the present state of the trade that it would have been impossible to avoid very heavy losses. This avoidance of a heavier loss had been brought about by the constant and unremitting attention which had been paid to every detail of the working of the collieries, and to the practice of the greatest economy. The directors had gone through the company's books *seriatim*, enquiring about every man as to why he was there and what he was doing, and also every item of expenditure, questioning whether it could not be cut down, and satisfying themselves in those cases where it could not that it was impossible to do so; but he might say that all their efforts in this direction had been anticipated by the manager, who had been cutting down the expenses in every direction, and had been working the collieries as cheaply as possible consistent with keeping them in a proper state. It would be necessary to touch on a few of the points in the report, which, as well as the balance-sheet, the board had endeavoured to put in as clear a manner as possible. With regard to the Pentre and Church Colliery the output could have been increased had the price been better, but the price had been so low, and Messrs. Cory Brothers had as usual got as good prices as they could possibly obtain. It was a matter for regret that in order to meet the large expenses and the royalty they were obliged to work that quantity of the splendid property they had during the past year. At Resolven they were commencing to work a portion of the colliery entirely for "through-and-through" coal, and as no better description of that fuel could be sent into the market it was to be hoped that there would be an increased trade and an increased output, as it seemed that the coal could be worked at a profit. With regard to the Resolven it was as well that he should state most clearly and explicitly that in reference to the company he had no alter native whatever but to carry out the work at once. The postponement had been a favour on the part of the lessor entirely. The board had concluded an arrangement to carry out this, which would be very beneficial to the company, and it was thought that the loss sustained during the past two years would very nearly be met by this means. A very stringent condition was attached to the arrangement which the directors had concluded—that neither the names nor the sums of money, nor any of the details respecting it, should be made public. The money for carrying out this work would have to be found forthwith, and before making a call (which if made would be for the payment at an early day of 10s. per share, and the remainder *sine die*) the board would wish to know if any of the shareholders would take up debentures of 10s. each, at 6 per cent. interest, to provide the money to carry out this sinking. With respect to the 4000l. reserve fund, this had merely been a nominal fund since the loss sustained by the five months' strike which took place in 1875, which, as the shareholders would, probably, all recollect, was a very disastrous thing for this and other companies. It was proposed, therefore, that this sum should no longer be entered as a reserve fund, but that it should be carried to a profit and loss account, thereby lessening that account by the amount of the sum. (Applause.)

Mr. HENRY WHITE had much pleasure in seconding the motion. Colonel SHAKESPEAR, after referring to the statistics of the coal trade for some years past, said he found that 531 collieries had fallen off between 1875 and 1878; the number of collieries and men had decreased 13 per cent., but the average output had increased from 29,000 to 33,000 tons per annum, or an increase of 14 per cent. It was perfectly certain that prices must go up, and that there was a good time coming, the certainty being the greater because the improvement was coming gradually. (Hear, hear.)

The CHAIRMAN was glad to hear Colonel Shakespear's opinion, but for his own part he would rather not prophesy one way or another. They all hoped that things would improve, and they dare not do more.

Mr. J. LEWIS thought if things did not soon mend the mines and the money spent on them would be lost to the shareholders. He suggested that instead of making a call the directors should make an assessment of 5s. per share on all the shareholders, and then, perhaps, the landlords would assist them. He was glad to find that the offer of Messrs. Cory, Yeo, and Co. with respect to the Resolven property was refused.

In reply to some questions asked by Mr. Lewis, the CHAIRMAN stated that a certain portion only of the coal raised at Resolven went to Swansea, whereas every pound of the Pentre coal went to Cardiff. That explained the difference of the railway and dock charges and cost of wagon hire at the two collieries. The company had not sustained a penny of bad debts, as all their debts were guaranteed by their agents. The arrangement with Messrs. Cory and Yeo was for seven years, ending next year. It was not terminable earlier.

Mr. G. ANDERSON, M.P., did not wish to reflect on the present directors, but very much otherwise, for he thought, considering the state of the coal trade generally, that they had some reason to be satisfied that they were in no worse condition. Pentre was paying a small profit, but was not that a comparatively small colliery, which ran the risk of being exhausted before the good times that Col. Shakespear had referred to appeared. It would be unfortunate if they spent all they got at Pentre to stop the hole at Resolven, for it seemed to be a mere question of time how long the company could last. They had already sustained a loss of 27,000l., and to this must be added the 4874l. lost last year. If they went on losing at that rate every year before the good times came Pentre might be altogether exhausted, which would be an unfortunate state of matters. For how many years was Pentre expected to last at the present rate of consumption, because that must be an element in the consideration of the question of how far they were justified in going on. Col. Shakespear's figures were, no doubt, interesting and valuable, but considering that there was no immediate prospect of any improvement he did not think those figures were worth a pin, for they could have been used just as well at the beginning of last year as at the beginning of this. They simply proved that a state of depression existed, and that that depression would come to an end, but they gave no evidence of when that would be. He did not know that a comparison of past years was of much use, for the whole condition of the mercantile affairs of the country were different now to what it was in former years. They could only hope that things would get better. He observed that the directors declined to let Messrs. Cory, Yeo, and Co., take back the Resolven property, and he supposed he must conclude that the price they offered to give for it was nothing like the price they got for it. Was the arrangement with Messrs. Cory, Yeo, and Co. so entirely fixed as an Act of Parliament?—The CHAIRMAN: The agency for the sale of coal only.

Mr. ANDERSON asked if the whole thing could not be upset if they were suffering from an extremely bad bargain made in the beginning, as well as from the depression in the coal trade? Had the board considered that aspect of the question? Mr. BLAND: Do I understand that Cory, Yeo, and Company got as high a price as possible?—The CHAIRMAN: They do.

Mr. BLAND: Then where is the advantage of changing?—The CHAIRMAN: We do not propose to change.

Mr. ANDERSON: Then you not only consider it no grievance, but you think it to the advantage of the company that the arrangement should remain in force?—The CHAIRMAN: I do not think, in the matter of shipping coal at Swansea, that any firm could do as well for us as Messrs. Cory and Yeo. They are, perhaps, the leading people there, and they have facilities for disposing of our coal which I do not think we could improve by changing to anybody else. They have offered to relinquish altogether the agency if desirable, but we did not consider it to the advantage of the company to accept their offer.

Mr. RUSSELL EVANS agreed with Mr. Anderson that it was no use to rely upon the experience of the past. He had no doubt that many collieries in England could double their output if it paid them to do so. If Mr. Anderson and other M.P.'s would persuade the United States to adopt a Free Trade policy they need not fear for the coal and iron trade of this country. (Hear, hear.) He would like to know what Messrs. Cory and Yeo offered for the Resolven property, which had cost this company from first to last probably 200,000l.? He believed the directors and the manager had done all they possibly could to keep down the expenses and to work the collieries as well and as cheaply as possible.

The CHAIRMAN stated, in reply to a question, that 65 of the cottages were still unoccupied.

In the course of some further discussion, Mr. MOXHAM suggested the division of the two properties into two separate companies, and Mr. C. WILLSON (having ascertained that the debentures now offered would rank exactly in the same position and with the same security as the old debentures) said he would most certainly oppose any assessment. He had paid up his shares in full, and if every shareholder would do that he would consent to an assessment; but at the present time an assessment would be illegal, and could not bind any of the shareholders. (Hear, hear.)—Mr. HORTON thought the question of the agency had far better be left in the hands of the directors, whom he believed, together with the agents, were doing all they could for the company.

In reply to questions, the CHAIRMAN said arrangements were being made which they believed would increase the sales from the Resolven by 40,000 or 50,000 tons a year. They had a 99 years' lease, and 4000 acres with coal enough to last for centuries at Resolven, and at Pentre they had 600 acres. Messrs. Cory, Yeo, and Co. had offered to return 180,500l. in the debentures and shares of the company, and to take over the Resolven property, 155,000l. being the amount (part of which was in cash) which they received for it, but they would not pay the company anything for what they had spent on the property while it had been in their possession.

Mr. JOHN CORY added that his firm had given the company financial assistance, and they would take any suggestions which might be made into their consideration. The report and accounts, with the resolutions stated by the Chairman, were then unanimously adopted.

On the motion of Mr. RUSSELL EVANS, seconded by Mr. ANDERSON, M.P., Mr. Mosley was re-elected a director, and on the motion of Mr. MOXHAM, seconded by Mr. ANDERSON, M.P., Mr. T. CONNELL was also re-elected a director.

On the motion of Mr. R. EVANS, seconded by Mr. J. CORY, Messrs. Cooper, Brothers, and Co. were appointed auditors.

On the motion of Mr. R. EVANS, seconded by Col. SHAKESPEAR, the following resolution was passed:—"That having regard to the circumstances connected with the formation of the company, and its present financial position, it is desirable that the board should take into its serious consideration the desirability of relieving the company of its debentures."

The meeting closed with a cordial vote of thanks to the Chairman.

PENSTRUTHAL CONSOLS TIN AND COPPER MINING CO.

A general meeting of shareholders was held at the offices of the company, Cornhill, on Tuesday.

Mr. JAMES LABY in the chair.

The circular convening the meeting was taken as read.

The CHAIRMAN said with respect to Mr. Waddington's scheme the secretary would read the number of responses which had been received from the shareholders with regard to it. Certainly the responses had not come up to his idea of what he would have supposed would have accrued from such an excellent scheme.

Mr. E. ASHMEAD (the secretary) stated that the number of shareholders who had sent in the forms to him was 34, for about 918 shares. Mr. Waddington had also received letters from shareholders offering, upon certain conditions, to take shares, altogether 1719 shares. The large shareholders had not as yet given their opinion one way or another. The large shareholders—say, 50—represented about one-half of the capital of the company.

The CHAIRMAN added that in issuing the debenture stock eighteen months ago the large shareholders came forward, but they did not get more than 2400l. out of the 5000l. which it was believed would have carried the mine through. After paying the merchants' bills &c., they had only about 1300l. to go on with.

Mr. A. BOLTON said compulsory liquidation would undoubtedly swallow up the property of those who were willing to provide a little cash, and those who were not. He would propose that they should try to raise the remainder of the 5000l., and leave Mr. Waddington's scheme for the present.

Mr. WALTON replied that the directors had already repeatedly appealed to the shareholders, but they would not come forward. For the new scheme subscriptions for only 1719 shares had been promised, and then it was only on certain conditions. Mr. BOLTON thought it very strange that shareholders should not come forward to keep the whole mine together if they would subscribe to a third of it. The CHAIRMAN replied that the majority of the applications were from Mr. Waddington's personal friends, the shareholders generally were not willing to put money into the company as at present constituted.

Mr. BOLTON asked what it was supposed would carry on operations?—The CHAIRMAN said they required at least 3000l. for working. The CHAIRMAN added that besides that there were the debts and 18-4 for land damages.

Mr. STURGE asked how many circulars were sent out asking the shareholders to take the debenture stock? His brother and himself took more than their proportion of the debentures. The CHAIRMAN, in reply, said three or four circulars were issued. He held about 1600 shares, and never sold one. Mr. WALTON said he held 730 shares, and had never sold any, and he had taken his proportion of the debentures. He was very much disappointed that so much apathy had been exhibited by the shareholders. Mr. STURGE said his brother and himself held 2500 in shares and 400l. in debenture stock.

A SHAREHOLDER asked whether the directors had any scheme of reconstruction to suggest in the event of the meeting deciding to liquidate the company? The CHAIRMAN said the only thing would be to put the property up to public auction, and then those who felt inclined could come forward and purchase it, to carry on.

In the course of some further conversation it was stated that the debts were about 1100l., against which the company expected to receive 500l. for the V.C. Consols Company. The Secretary said he had received a letter suggesting, in the event of reconstruction, that the capital of the new company should be 30,000l., in 1l. shares, and that 15,000 fully paid shares should be offered first to the shareholders taking their proportion of the capital shares, to be paid 5s. down, 5s. in a month, and the rest 1l. and when required. The debenture holders might take their debt in 2400 ordinary and 2400 bonus shares, leaving 12,600l. capital. The correspondent added he had a very high opinion of the mine, and believed that if the money squandered in the early days of the company had been spent properly the company would have been in a very different position.

After a few other remarks, the scheme having fallen through, the meeting terminated.

At an extraordinary general meeting which followed, the SECRETARY read the notice convening it, and the CHAIRMAN said the shareholders had heard that the company had liabilities amounting to about 1100l., besides the 2400l. debenture stock. He then moved—

"That it has been proved to the satisfaction of the Penstruthal Consols Tin and Copper Mining Company (Limited) that the said company cannot, by reason of its liabilities, continue its business, and that it is advisable to wind-up the same, and that the company be wound up voluntarily."

Mr. H. WADDINGTON seconded the motion, which was carried unanimously. Mr. STURGE proposed that Messrs. Laby and Walton should be the liquidators, if they would be kind enough to consent to do so.—Mr. BOLTON seconded the proposition.

Mr. GRANVILLE SHARP suggested the addition of the name of Mr. Waddington,

who was well known to the merchants of Cornwall, and to the lord also, and it was very important that they should have such a name as Mr. Waddington's associated with the directors.

This suggestion was adopted, and Messrs. Laby, Walton, and Waddington were appointed liquidators.

The meeting closed with a vote of thanks to the Chairman.

WEST BASSET.—At the meeting on Tuesday (Mr. J. C. Daubuz in the chair) the accounts for the 12 weeks showed a profit of 906l. 14s. 8d., reducing the debit-balance to 13,097l. 11s. The Chairman stated that the committee had made an arrangement with the Cornish Bank to take over the outstanding balance due to Messrs. Tweedy. During the past quarter the returns of tin had been well maintained. After deducting 83 tons, the estimated produce of 600 tons of stocked tinstuff stamped, the actual cost of production would again be about 30l. per ton. The contract entered into with Messrs. Henderson and Son, of Truro, in October last, to drive 100 fms. of level with the Eclipse rock-drill, being now nearly completed, it is contemplated to enter into a new contract either with those gentlemen or some others to drive from 50 to 100 fms. of levels in the eastern part of the mine so as to prove the flat lode in that direction. Within the last few days Mr. Basset, the lord of that part of the mine, had voluntarily offered to contribute a proportion of the extra cost of drainage by machinery on certain conditions, the details of which had to be arranged by the company. Mr. Woolcock believed there was not a mine in the county that was returning so large an amount of tin at such a small cost for salaries, and he was glad to see that the committee had seen their way clear to increase the salaries of the agents. There could be no doubt that to the energy and ability of the committee was due the position which the mine was now in, and he thought they had ample evidence of this in the fact that their bankers' debt had within a very few months been reduced from 15,000l. to only 7000l. He, therefore, thought that the committee, as well as the agents, were deserving of some recognition of their services, and he had great pleasure in proposing that they be voted the sum of 200l.—Mr. Lidger seconded the motion, which was carried unanimously.—Captain Nicholas observed that that was one of the best account meetings they had ever held. The mine was in a more prosperous state than it had ever been since his connection with West Basset. They had had a long hill to climb, but he believed they would soon reach the top, and that the day was not far distant when the mine would be laid open in such a manner as would satisfy them all.

GAWTON COPPER MINE.—At the special meeting, on Wednesday (Mr. E. Hunter in the chair), the secretary reported that there were 173 shares in arrears of calls made prior to May 29, the amount due upon them being 94l. 2s. These shares were declared forfeited, and ordered to be carried to forfeited share account, pursuant to Statutes Act, 1869. The committee were authorised to disposed of them at their discretion.

VAN RAILWAY.—At the ordinary general meeting of shareholders on Tuesday (Mr. A. R. Boughton-Knight in the chair), the directors' report and accounts were taken as read, and after the Chairman's statement it was resolved "That the directors' report and statement of accounts be received and adopted. That a dividend at the rate of 2l. per cent. per annum, free of income tax, amounting to 200l., be, and it is hereby declared, payable forthwith. That the Marquis of Londonderry and Mr. David Davies, M.P., be re-elected directors of the company, and that Mr. Frederick Hunt be re-elected auditor of the company."

FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, July 21: Produce eleven days, first division of July, 12,000 oits.; yield, 58 oits. per ton. Profit for the month of June, 8400l. All going on well.

DON PEDRO.—Captain Vivian reports under date June 24 as follows:—The 60 ft. Wheel and Drainage: Since advising you last we have succeeded in reaching the 15-inch plunger lift, and put same in perfect order, and commenced working it, and have forked the water 9 ft. below the 40 ft. level; we might have easily forked to the bottom of the mine ere this had it been prudent to do so, supposing the bottom lift to be all right, and which I have no doubt of. Before draining any deeper it will be necessary to clear and secure the most important parts already reached; in this we have great difficulty to contend with, in consequence of chokes in the cross-outs, thereby stopping all ventilation between No. 1 incline shaft and No. 2 incline drawing shaft, at which points every exertion is being used to overcome the difficulty, and put them in working order.—Mine captain's letter dated June 23. General Remarks: The ore has been derived from Bryan's stopes, and ruled of a little better quality than when last reported, the amelioration having taken place in a stope started from No. 2 stope; the lode is hazy and irregular in this stope. In the other excavations at this point no alteration to note has occurred.—Prospective and Running Work: No. 1 Incline Shaft: A great many temporary repairs have been made in this incline beyond daylight. Pully lift extended so as to regain plunger pole; water forked to sixteen ft. level. Valves examined, dead end cleared of debris, &c.; also eastern windrows washed out, &c. Jackhead partly disconnected, and incline road extended to jackhead lift.—No. 2 Incline Shaft: Fair progress made here until the evening of the 19th current, when the air became so foul that no light could be carried down 5 fathoms of level. Immediate steps were taken to fix a bellows and air pipes to blow out the impure air, which was effected by the evening of the 20th, and operations resumed here; the heat continues intense. Progress at the new level continues fair. Several sets of laths have been changed in Alice's level. The repairs of Symons' shaft are nearly completed from Harry's cross cut to surface.—Drainage: 60 ft. Wheel and Other Machinery: We succeeded in forking the mine with jackhead and pulley lift sufficiently low to redeem plunger pole newly packed, stuffing box of same, and forked to sixteen ft. since when we have examined valves of plunger lift, cleared dead end of debris, also eastern, &c., and washed out winders of same, put in three more rollers, changed some lining newly made level joint of columns, wedged some joints of the rods that were loose, disconnected jackhead lift, and stowed the castings away in the incline conveniently for using same below the 40 ft. level when required, and many other jobs done too small to merit special mention.

EBERHARDT AND AUORA.—F. Drake, June 30: I was very much pleased to learn that the general meeting passed off so harmoniously and satisfactorily. I might ask how could it be otherwise, when in the address of our hon. Chairman to the shareholders he placed the whole matter in so plain and business-like manner. The meeting to the shareholders, and the business in it, was like a like, and as long as we have so good and efficient officers sitting on our board of directors in London there can scarcely be such a thing as failure. For that there is rich ore in Treasure Hill there can be no doubt, and with the energy manifest in the home office the vaults of the now hidden treasure must be opened. Every effort that lies in my power shall be put forth to further this object. I feel the situation keenly, and from day to day as I go into the drift (leading to the once rich Eberhardt Mine), and find that there has been no change of ground, it causes my heart to sink within me; yet I feel like going at it with a greater determination (if possible) to conquer. I do still believe that the time will be but short when the company will be remunerated for the patience and money put forth into this enterprise. What more need I say for as our hon. Chairman stated, is it not a reasonable inference that silver must be there?

Eberhardt Drift: I am not able at this time to report any new developments, as the character of the ground through which we are running has not materially changed since my last report. The seams or breaks are still pitching nearly vertical. The ground is hard and breaks short. We see no indications of reaching the keystone wall in the direction we are now running, and I think it better to make the change as desired by the board. It may be some little time before I have not made the change before, but I beg to state (the cause being in part) that from the 15th to the 24th inst. there was no work done in the drift on account of the contractors and men being ill, and they could not get experienced drillmen to take their place. They have now recovered their health, and are pushing their work to the uttermost, and since my last progress statement they have advanced 26 ft., making total length of drift, June 28, 1042 ft. After we suspend the driving of the drift, and before we take up our air-pipe, track, &c., I think it advisable to make an upraise in drift at point where we come upon the rock and soft ground, 469 ft. from tunnel. The object of doing this work will be to determine how far the shale extends towards the surface, and also to further demonstrate whether this break has any connection with the Eberhardt fissure. In some respects this is a very favourable point to explore the ground above us. As long as the ground was broken and loose we would be obliged to secure it by timber. This being the case the other supplies would be light. It would be very difficult to make a correct estimate of its total cost per foot until after there had been some work done, and learned the character of the ground. I will here say that by invitation Mr. Thomas and Mr. R. Ricardo, of the Richmond Mining Company made me a visit, and I took them into the tunnel and drift, and consulted with Mr. Ricardo upon the advisability of doing work at this point, and he said that he should strongly recommend the same to be done to my company. In doing the work it will in no way interfere with the running of the main tunnel, which will commence very shortly by contract. In driving the main tunnel it will be necessary for me to get my supplies from California, such as powder, fuse, candles, Tee-rolls, pipes, &c., and by buying in quantities I can get them much cheaper. I have not as yet made any arrangements for the purchasing of these supplies on account of not knowing how the money will come in for the debentures, and I dare not involve the company without first knowing how to meet payments. I would be pleased to have the directors inform me about what extent money can be expected, so that I can govern myself accordingly.

Enclosed please find copy of letter from Mr. Gumbinner, in reply to one I sent

him of date June 7 (copy of which I forwarded to company in my No. 378, date of June 14). I also enclose press copy of my reply to same of date June 23. I do not think that a letter of the character of Mr. Gumbinner's should be answered in writing. It shows the animus of the writer, and should be dealt with accordingly. Knowing Mr. Gumbinner's business capacity as well as I do, I feel perfectly satisfied that he could never carry through a contract of this kind, and when he offers me a percentage out of the concern I know too well what it means. In a business view, such men are dangerous, and when he asserts that it is legitimate in the United States to do business in that way he states that which is not true, and something unknown to me in all my business transactions. I think I need say no more upon this subject. I hope my business connections with the company in this regard will not be affected by so vile a letter.

BLUE TENT.—D. T. Hughes, June 30: We have had a little broken time in our washing in South Yuba the past week, owing to our cleaning up (as I explained to you before) in sections, so as to utilize the whole of our water as we go along. Our powder drifts are nearly completed again, and we shall likely set off on the latter part of next week; we have another small one also set off at the Gopher claim in a few days. Our water is holding out well in our ditch, and no sign of falling yet.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada: Week's run, \$55,000, from 1071 tons of ore. Dore bars from refinery, \$45,000.

—R. Rickard, July 2: Since my last operations both in mine and smelting works have been carried on with the usual regularity without any material change to report. The 200 cross cut has been drifted 41 ft., and the ground in the present end is very much improved, and looks more favourable for ore. The 400 cross cut has been drifted 25 ft. in the same character of ground. A cross cut has been started to drift southerly from a point 85 ft. west of Junction; this drift is to explore the ground to the south west of the present 400 ft. level. The 600 north cross cut has been drifted 15 ft.; the end is in the same character of rock. The 600 west drift is in very favourable ground for ore, and has been drifted during the past week 21 ft. The 600 drift from the north cross cut has been advanced 37 ft.; the ground is not looking so favourable as it was, and work in this drift has been suspended for the time being. The 900 north cross cut has been advanced 8 ft., without any material change. The 900 west has been drifted 10 ft. in the same character of ground. Work in the 900 north and west has been suspended, and a cross cut started south opposite the north cross cut. The chambers are without any material change since last week.

PLACERVILLE.—L. Thomas, June 30: During the past two weeks ending this date the 4th level has been driven north 14 feet, making a total length of 104 feet. The cross cut from the 500 ft. station has been driven 3 ft., making a total length of 61 ft. The 5th level has been driven north 8 ft. Extracting ore.

MINERAL HILL.—Mr. Plummer, July 1: Mineral Hill: The tribute pitche; are still producing a little ore, but not in very large quantities.—Union District: The branch of ore reported in my last improving as we open on it; some samples assayed this week produced \$21 to \$5 per ton in silver. We must try to improve as we go down; it is easy for sinking, and a few weeks with two or three men will develop it to considerable extent. It is the only place that looks encouraging, and as a surface prospect it looks as well as any in the district. The rest of the company's property is in good order.

ISABELLE (Gold and Silver).—Foreman's report, June 28: I herein submit my report for the week ending above date. Total distance from monument to face of tunnel 464 ft.; distance run for week, 37 ft. The rock is very tough, drills well, but has little body, not breaking to the bottom of the holes; we will overcome that difficulty by changing the course of the rock. The rock is better than any we have met since starting up machines. Have just started night shift, and they are getting pretty well broken in to run machines.

PESTARENA UNITED (Gold).—Mines, July 17: District Pestarena: We have an improvement in the 33 and north, on No. 1 lode, the lode at present yielding 3 tons of ore per fm. The lode in the 33 and north, on No. 5 lode, continues to produce 4 tons per fathom, with 1 oz. 8 dwts. per ton. The 100 and north bids fair for an improvement; the lode is at present 2 ft. wide, saving work for picking, and the 100 and north, on the 100 south, are not looking so well. All other points remain much as when reported on the 7th.—Val Topop: The end south on the western lode, in No. 2 level, has fallen off considerably. All other points are much the same as when last reported on.

SENTEIN.—July 19: The managers report as follows:—We have now only 12 miners at work at the mine, who have broken this week about 45 tons of lead and blende ore. There are four driving the No. 4 St. Eugene level end, which is a little harder than usual—four stoping in the back of the same level, and four stoping in the bottom of No. 3 St. Eugene level. These stopes are of the same value as last week. We do not think of increasing our staff at the mine until we have brought down most of the mineral now broken and lodged in the mine. This will take us we expect about eight weeks to do. On Monday next we shall have 18 or 20 carts going to the mine, which will bring down from 40 to 45 tons of ore per day. And we expect several more horses here soon. At the dressing-floors everything goes well.

WEST PATELEY BRIDGE LEAD MINES.

Mr. Dineen, F.R.G.S., an authority well known in the North of England, has made the following report upon these mines:—

WEST PATELEY BRIDGE LEAD MINES, NEAR PATELEY BRIDGE, YORKSHIRE.

July 21.—I visited these Mines on the 11th inst., and have much pleasure in congratulating the shareholders on the success of their undertaking. Your intelligent and practical agent, Capt. David Williams, conducted me through the mines, with which I was well pleased. When I visited these mines, about 18 months ago, I then expressed my opinion that in the hands of a competent manager the West Pateley Bridge Mines would prove a valuable property. I have not been disappointed, although I did not expect that in the short space of 18 months my expectations would be so fully realised. Many valuable mines have been abandoned for want of competent managers, and this valuable property will have brought down most of the mineral now broken and lodged in the mine. West Pateley Bridge is situated at Greenhow Hill, on the high road from Skipton to Pateley Bridge, and within four miles of the latter town. The veins are in the mountain limestone, mixed with spar and barytes, giving strong indications of powerful and productive lodes. Being surrounded by productive mines, there is every prospect of it proving a valuable property.

The set is $\frac{3}{4}$ mile square. Judging from surface indications, there are 12 to 15 veins, forming various junctions and intersections, and such as invariably result in rich deposits of ore. The veins are well defined, and reflect credit to the management. Here, about 10 tons of ore, and about 1 ton of un-dressed, should from appearance would yield over 80 per cent. of lead. Here is also a new Robey engine, 15-horse power, lately erected, with an air-compressor. Also a neat saw bench, with other necessary plant, effecting much saving of labour, and will very materially assist in developing the property. The engine is erected about 200 yards from the Craven Cross shaft, and supplies No. 2 shaft, which is sunk 12 fathoms on the vein, and the back of the 2d, south-east, is worth 15 cwt. of ore to the fathom worked as a metal pitch, at 28 per ton dressed ore. I saw about 3 tons of ore in No. 2 ore bin. Craven Cross shaft is sunk 68½ fms. from surface. The 58 is on the Craven Cross vein. From the 58 two horizontal cross-cuts are put out from a point 9 fms. east of Craven Cross shaft.

The south-west cross cut is in 24 fms., and driven by Cranston's rock drill, worked by compressed air, and does its work admirably. The levels are well and clearly driven, and will average over 7 ft. by 5 ft. The north-east cross cut is driven 19 fms., and is within 16 fms. of intersecting one of the richest veins worked in the adjoining set. The 58 is driven north-west a distance of 32 fms. When driven 18 fms. the vein began to prove productive, after which the lode gradually widened out for 100 ft., and became a mass of solid ore 2 ft. wide. At the heading or forebrest I measured the lode nearly 2 ft. 6 in. wide. For some distance it will fully yield 1 tons of ore to the fathom, and from present appearances will widen out as they progress. A more promising lode it has never been my lot to witness, and judging from the surrounding productive properties the West Pateley Bridge Mines are likely to yield a valuable harvest to the fortunate shareholders, and will well repay them for their patient and determined perseverance. The 67 north-west and of upon the Craven Cross vein, is another level about 11 fms. deeper, and driven directly under it. The ore is found in bunches, and looks better than the other did in the same distance from the surface.

The 67, south-east, is driven 10 fathoms from shaft in a vein 2 ft. wide, at present producing good leadstuff for the crusher, and likely to improve as you approach the ore ground going down in the soles of the level above. As before stated, the No. 2 shaft is sunk 32 fms. on the vein, and parallel with the Craven Cross vein, and about 100 fms. apart. This is promising well, and improves as they descend; and, judging from present appearance, is likely to yield equal to the Craven Cross lode. The south-west and north-east cross cuts ought soon to intersect the veins running in the opposite direction, and which no doubt will be very productive. In conclusion, I would advise the shareholders of the West Pateley Bridge Mines not to dispose of their shares at present, as the productive appearance of the mines warrant me in stating that those shares must rise to a high premium. I shall be greatly disappointed if it should prove otherwise. I give my honest and independent opinion, and believe that in the hands of your present manager the shareholders have nothing to fear. As to the future workings of the mines I need make no remark, believing that everything is being done that is necessary to make those mines a valuable property.—T. DINEEN, F.R.G.S.

THE WEEK.

SATURDAY, JULY 19.—There were one or two rather extreme fluctuations in railways. At the commencement of business the tendency was firmer, Brighton A. for instance, touching 10½, but the stock was so largely offered afterwards that the price receded to 10½. Great Eastern closed no better than 85, after being 86½. Caledonian, 94½ to 94½; Sheffield, 73½ to 73½; Dover, A. 107½ to 107½; Berwick, 128½ to 128½; Great Western, 9½ to 9½. Business done in Ebbw Vale closed at 13½, and in Newbuda Coal at 4½. General Credit, 4½ to 5; National Discount, 9½ to 9½; Hudson Bay, 13½ to 13½; Pawan and Co., 8½ to 8½.

MONDAY.—Business was chiefly centred in railways, which were again very irregular. From 105 Brighton A. fell to 103½, but recovered to 104½. From 85 Great Eastern receded to 84½, but touched 85½ at the close. A more marked recovery was shown in North Eastern. After remaining a long time neglected at 127½, some spirited bidding towards the close of the day forced the price up to 129½. It was rumoured that the dividend is not likely to be lower than 8 per cent. Some have hopes of even getting 8½ per cent. Midland Bank, 9 to 11. Mercantile Bank of the River Plate, 1½ to 2. Bank of Roumania, 10 to 10½. Alliance, 9½ to 10. The report of London and Provincial Bank mentions that 5088 new shares have been allotted at 4l. premium. The dividend is to be at the rate of 12½ per cent.

TUESDAY.—Brighton A. moved further downwards; after being dealt in at 104½, the last price was not better than 102½ to 103. Berwick touched 130, but only to recede to 129; so little of this stock appears to be on the market that very small offers either way sensibly affect the price at once. Richmond was very dull, receding from 7½ to 7½. Pumas Eureka, 2½ to 2½; Don Pedro, 9½ to 9½; New Quebec, 1½ to 2½; Wheel Orebore, 2 to 3½; Nouveau Monde, 3½ to 3½; Rio Tinto, 3½ to 4.

WEDNESDAY.—Business was again done in Brighton A. below 103, but after the holding of the meeting at London Bridge a marked recovery set in. Bidding for the stock went on until 105 was reached. In sympathy Dover, A. rose 1 to 108. Rumours were current of a forthcoming dividend in Metropolitan District; the stock advanced rapidly from 64 to 66. Richmond recovered to 7½, 7½.

THURSDAY.—The Chatham dividend on the Preference stock of 8½ compares with 8½, and so far is favourable, but so much has been written about the im-

provement setting in by "bonds and leaps" that many new holders must be disappointed. A dividend of 5 per cent. is announced by the Royal Aquarium Society, while 1000l. is to be added to the reserve fund. Brighton A. had a further marked rise, touching 104½ at one time.

FRIDAY (Opening).—The railway market is very animated, owing mainly to the prevalence of better weather. Brighton A. are up to 106½, and District to 68½. The Berwick dividend is announced as one of 5 per cent., against 6 per cent. last year. This is supposed to be very favourable, and the price is as high as 131l. York A., 119½ to 120; Sheffield, 74½ to 74½; Caledonian, 95½ to 95½. Mines remain neglected. Eberhardt, 1½ to 2½; Richmond, 7½ to 7½; Colorado, 1½ to 1½; Nouveau Monde, 11 16ths to 18 16ths.—Two o'clock.—Railways have suffered a relapse. Berwicks have declined to 129½, and Brighton A. are no better than 105½. Districts are now offered at 65. Varna shares, 4½ to 4½; ditto obligations, 6½ to 6½; Unified, 47½ to 48; preference, 72½ to 72½; Lombards, 7½ to 8½. Consols are now the same as last night, 97½ to 98. North British, 75½ to 76½; Chatham (pref.) 92½ to 93; Sheffield, 74½ to 74½.—Four o'clock.—Just at the close the tone of railways was slightly improved by the announcement of the Metropolitan District dividend of 1½ per cent., which is the most satisfactory yet declared. Berwick recovered to 130½, while York A. remained dull, and no better than 118. Dover, A. 107½ to 108; British, 75½ to 75½; Cardiff and Swansea, ¾ to 1; Chapel House, 1 to 1½; Newport Abercorn 4 to 4½.

FARDINAND R. KIRK.

GENERAL MARKETS.—The fine weather of the last few days has caused a rebound in the prices of all English railways, particularly in those which have been so heavily sold of late. Brighton (A.), after being as low as 103, have recovered to 108½. The dividend of North Eastern is announced at the rate of 5 per cent., as against 6 per cent. last year. This is very satisfactory, considering the heavy decreases in the traffic. The dividend on Chatham Preference, too, is good, 3½ per cent. for the year, against 3½ per cent. last year. Metropolitan District are considerably higher, on the prospects of a favourable dividend. Were we to have a few weeks of fine weather now, markets would undoubtedly go better for the time; but I look for lower prices in nearly all railway stocks before the end of the year. Foreign stocks are quiet, and show very little change for the week. Russian are rather lower; Egyptians steady. The English funds are firm; Consols, 99½. In mines very little business is doing, and most shares are lower.—W. H. H. WATSON: 1, St. Michael's alley, Cornhill, E.C. July 25.

THE VAN MINES—MONTHLY REPORT.

July 23.—In the 120 fm. level, west of shaft, we are now driving on the south part of the lode, which looks more favourable. At the 105 west we are crossing north at the present end in search of the ore ground seen going down on the bottom of the 90, but as yet have not reached it. We have cut into a strong feed of water, which in this lode is a very favourable indication. The two stopes in the back of the 105, at 90 and 100 fms. west of shaft, are on the average 14 ft. wide, and contain 22 cwt. of lead ore per cubic fathom. The stripping of the lode to full width in the side of the 105, at points 63 and 70 fms. west of shaft, is worth 18 cwt. of lead ore per cubic fathom. The 60 fm. level, west, sinking below the 105 west, is down 10½ fathoms. The 90, west of shaft, is still suspended, and will be until the men have completed the stripping of the lode to full width, and put in stulls ready for stoping at a point about 140 fms. west of shaft, where the lode is worth 2 tons of lead ore per cubic fathom. The stopes in the back of the 90 (nine in number) are on the average 20 ft. wide, worth 32 cwt. of lead ore per cubic fathom. The stopes in the back of the 75 (also nine in number) are worth 1 ton of lead ore per cubic fathom; average width, 15 feet. The stopes in the back of the 60 (seven in number) are worth 22 cwt. of lead ore per cubic fathom; average width, 12 ft. 6 in. The stopes in the back of the 30, east of shaft, is 12 ft. wide, worth 15 cwt. of lead ore per cubic fathom. The trial winze sinking below the 30, at a point 50 fms. east of shaft (on a branch of lead ore) is down 4 fms.; the lode here is worth 1 ton of lead ore per cubic fathom. The rise in the back of the 30, under Edward's shaft, is up 14 ft.—Surface: The machinery is all in good working order. We have reduced the quantity for sale to-morrow, by your instructions, to 300 tons of lead ore and 150 tons of blende.—WM. WILLIAMS.

DESTRUCTION OF FIRE-DAMP.—Many years since an alleged discovery of a method of destroying fire-damp was claimed by an old correspondent of the *Mining Journal*—Mr. Arthur Wall—and in the course of a lengthened discussion which followed it was shown that the project was not new, and had proved impracticable. Several French inventors have since turned their attention in the same direction, but have been no more successful. It appears, however, that Mr. J. R. Laurent, of Wilkesbarre, Pennsylvania, has been more fortunate, for he claims to have discovered and successfully tested a process by which the dangerous properties of fire-damp can be entirely neutralised. Like former inventors, Mr. Laurent claims that his discovery is a chemical substance from which a gas is given off that, he says, will so neutralise the mine gas as to destroy its inflammability, and yet not so utterly dissolve or separate its constituent parts as to leave the deadly black damp—which follows an explosion, and to inhale which is certain death—or anything like it. Mr. Laurent's product has a natural affinity for the mine gas, and will seek its abiding places; but in order that it may not be driven out by the strong currents of air considered necessary to be forced into coal mines to make living and working in them at all possible, before its work is accomplished it is proposed to introduce it through a system of pipes so arranged that it can be carried directly to the mine gases, and shut off or turned on as occasion may require. Mr. Laurent has tested his discovery in connection with ordinary illuminating gas, the gas evolved from anthracite burning in a stove or grate, and as an extinguisher of an ordinary fire, and appears to be convinced thereby of its efficacy as a neutraliser of mine gases. He purposes, as soon as he can have prepared the necessary apparatus, to try it, first in connection with mine gas emitted through fissures through the rock or earth, and then in the mines. Mr. Laurent states that he has made a study of the subject of chemistry for many years, and was the inventor of the first fire extinguisher, and of a process by which scrap tin may be manufactured into sheets.

AGRICULTURAL PATENTS.—The second part (extending from 1867 to 1876) of the second division of Abridgments of Specifications relating to Agriculture has just been issued by H.M. Commissioners of Patents (price 1s. 5d. by post), and contains ample information to enable the inventor turning his attention to the same class of subject to ascertain whether his ideas have been anticipated by any applicant for a patent relating to Barn and Farmyard Implements, including the cleansing, drying, and storing of grain within the period mentioned. Although none of the inventions have any direct connection with mining, it is not improbable that many of the inventions for screening grain, for sorting and separating grain, and for washing grain, might afford valuable suggestions to the ingenious mine agent or engineer for constructing conveying machines adapted to the more economic treatment of mineral.

IMPROVED BUCKET HANDLE.—A clever iron-wire bucket handle has been invented by Mr. V. H. Jones, of Coventry, by which the ordinary wood-sheath handle is superseded. The wire handle is simply coiled in the centre, and this coil affords not only a secure grip, but is absolutely indestructible by being part and parcel of the handle itself.

The following report was received too late for insertion in its proper place:—

GAWTON COPPER.—George Rowe, George Rowe, jun., July 19: The lode in the 117 east is 6 ft. wide, principally composed of copper and spar, mixed with arsenical muddle and ore. The lode in the 105 east is carried 6 ft. wide, producing arsenical muddle and ore, to the amount of 10 tons per fathom, altogether of a very kindly appearance. The Nos. 1, 2, and 3 stopes, below the 105, both east and west of winze, are worth from 8l. to 10l. per fathom. The lode in the 95 east is worth 10l. per fathom. The lode in the 95 east is improving in character, and producing 3 tons of arsenical muddle, mixed with ore, per fathom. We are busily engaged in preparing our next sampling, which we calculate will be about 150 tons of copper ore and 180 tons of arsenical muddle.

HOLLOWAY'S PILLS—WRONGS MADE RIGHT.—Every day that any bodily suffering is permitted to continue renders it more certain to become chronic or dangerous. Holloway's purifying, cooling, and strengthening pills are well adapted for any irregularity of the human body, and should be taken when the stomach is disordered, the liver deranged, the kidneys inactive, the bowels torpid, or the brain muddled. With this medicine every invalid can cure himself, and those who are weak and infirm through imperfect digestion may make themselves strong and stout by Holloway's excellent pills. A few doses of them usually mitigate the most painful symptoms caused by indigestion, food, from which they thoroughly free the alimentary canal, and completely restore its natural power and action.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
July 24—Van.	60	.....	9 5 0	Panther Lead Company.
— ditto	50	.....	9 5 0	— ditto
— ditto	20	.....	9 5 0	— ditto
— ditto	160	.....	9 12 0	— ditto
— ditto	60	.....	9 5 0	Par Smelting Works.
— Tankerville	75	.....	8 2 6	Sheldon, Bush, and Co.
— ditto	25	.....	8 2 6	George Burr.
— East Roman Gravel	25	.....	2 6 0	Sheldon, Bush, and Co.

J. S. MERRY,
ASSAYER AND ANALYTICAL CHEMIST,
SWANSEA.

SUPPLY ASSAY OFFICE REQUIREMENTS AND RE-AGENTS.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

RUBY AND DUNDEBERG CONSOLIDATED MINING COMPANY (Limited).—Capital 253,000*l.*, in shares of 10*l.* The adoption of an agreement made between W. A. Malcolm, of Cambridge Park, Twickenham; Major-General D'Oyly, 6, Charles street; J. Moore Hyde, 77, Cambridge Gardens; and L. Malcolm, of 22, St. Mary Axe, merchant (the liquidators of the Ruby Consolidated Mining Company, Limited), of the one part, and J. T. Hamilton, of 82, Oakley street, Chelsea, for the company, to purchase the business, goodwill, mines, mining and other property, stock-in-trade, rights, assets and effects of the said company, including the rights of carrying on the business as its successors, working, raising, winning, washing, getting of ores, metals, and minerals, the manufacturing and smelting of ores, minerals, &c. The subscribers (who take one share each) are—J. W. D'Oyly, 6, Charles street, major-general; J. M. Hyde, 77, Cambridge gardens, gentleman; J. F. Hamilton, 82, Oakley street, gentleman; C. D. Boyds, 22, St. Mary Axe, gentleman; W. Armstrong, 23, Austinfriars, merchant; W. Just, 7, India Buildings, shipowner; J. Knight, 53, Moorgate street, solicitor. The directors shall not exceed seven or be less than four. The following are the first directors:—Major-General D'Oyly, Messrs. Hyde, L. A. Malcolm, and W. A. Malcolm. The remuneration not to be less than 1000*l.* a year; qualification 50 shares.

CRANE SHIPPING COMPANY (Limited).—Capital 27,000*l.*, in shares of 100*l.* To purchase, build, charter, and trade with steam and other ships, boats, and vessels. The subscribers (who take one share each) are—W. Fletcher, Henbleside; R. Dent, Newcastle-on-Tyne; J. Dent, Blyth; J. Dent, jun., Blyth; W. R. Smith, Blyth; J. Laws, Blyth; T. T. Anderson, South Shields.

THE REFINED CRYSTALLINE TERTH MANUFACTURING COMPANY (Limited).—Capital 10,000*l.*, in shares of 10*l.* To purchase, as per agreement, the business, factory, plant, and premises of the London Dental Company, and to carry on said business. The subscribers are—F. D'Armfeld, 5, Friar street, 10; J. Wellow, 44, Baker street, 5; E. B. Walmisley, 36, Porchester square, 2; M. Collier, 13, Cambridge terrace, 3; W. Ruge, Acton, 20; J. S. Hornblow, 41, Tavistock square, 5; F. Bowerman, 32, Great Saint Helen's, 3.

WISBECH PUBLIC HALL SOCIETY, originally registered in 1854, now incorporated under the Companies Act of 1862.

PAWSON, HUDSON, AND COMPANY, originally registered in 1843 now incorporated under the Companies Act of 1862.

THE YARMOUTH AND EAST COAST MUTUAL MARINE TOTAL LOSS INSURANCE COMPANY (Limited).—Every member undertakes to contribute to the assets of the company in the event of the same being wound up when he is a member, and within one year afterwards, not exceeding 5*l.* The mutual insurance of fishing vessels. The subscribers are—J. W. De Caux, Great Yarmouth; A. Bland, Great Yarmouth; T. R. Salmon, Great Yarmouth; W. Walls, Great Yarmouth; P. Cox, Great Yarmouth; W. Easter, Great Yarmouth; W. Howes, Great Yarmouth.

THE SAINT ETIENNE COMPANY OF FRANCE (Limited).—Capital 100,000*l.*, in shares of 5*l.* The purchasing, or otherwise acquiring of a concession of coal mines, called D'Unieux et Fraise and their dependencies, situate in the Canton of Chambon, Fengerolles, near Firminy Arrondissement, Loire, France, also the goodwill and business and the real and personal property and assets belonging to the said concession and the rights thereunder, and generally for carrying on the business of colliery proprietors, coal and iron masters, smelters, brickmakers and fire-clay workers, and the erection of all works, plant, and machinery necessary. The adoption and carrying out of an agreement between W. P. Partington, H. Syme, and W. Crighton Chalmers on behalf of the company. The mining, exploring, working, and generally utilising the aforesaid mines or other property, and the selling and disposing of the products. The subscribers (who take one share each) are—J. R. McEwen, Baling, clerk; H. W. Petch, Lower Clapton, clerk; A. McEwen, Lambeth, messenger; J. Mayne, Mile End, messenger; J. Kelly, Mile End, messenger; G. H. Brown, 110, Fenchurch street, accountant; J. R. Pratt, 65, St. Thomas's road, clerk. The first directors are the Earl Poulett, Messrs. H. Syme, G. O. Dean, J. P. and R. G. Dunn. Number of directors no more than nine or less than three. Salary 500*l.* to the Chairman, and 500*l.* to be divided amongst the directors, and in addition 5 per cent. of the net profits of the company to be divided among the directors.

ANGLO-AMERICAN PACKAGE AND TRADING COMPANY (Limited).—Capital 5000*l.*, in shares of 10*l.* The carrying on the manufacture of paper bags, globes, envelopes, or other cases, for the holding of any goods, merchandise, wares, or things whatsoever. The subscribers are—W. Lowe, 4, Billiter street, 20; W. S. Vill, 34, Lead-hall street, 99; J. A. Huckvale, 4, Billiter street, 99; H. A. Lane, 35, Queen Victoria street, 99; J. P. Davenport, 35, Queen Victoria street, 3; J. W. Temple, 34, Tenterden street, 99; G. Huckvale, 35, Craven street, 2.

TRADERS' DEFENCE ASSOCIATION (Limited).—Capital 25,000*l.*, in shares of 1*l.* To act as agents and intermediaries between manufacturers, traders, and consumers. The subscribers (who take one share each) are—W. N. Smith, Highgate; C. Minshall, 172, Fenchurch street; C. R. Jacobs, 20, Budget row; F. Darle, 20, Budget row; W. Kennedy, 130, Fleet street; F. Whitehurst, Putney; F. E. Whitehurst, Putney.

SOUTH DURHAM AND NORTH YORKSHIRE WHOLESALE TRADERS' ASSOCIATION (Limited).—Every member undertakes to contribute 1*l.* to the assets of the association, if necessary, in the event of its being wound up. To promote unity of action on the part of creditors in dealing with insolvent estates. The subscribers are—R. H. Appleton, South Stockton; G. Bennington, Stockton-on-Tees; J. Craddock, Stockton; G. Craggs, Stockton; J. W. Davison, Stockton; C. Fubess, West Hartlepool; J. Lingford, Bishop Auckland.

GENERAL COMMERCIAL AGENCY (Limited).—Capital 5000*l.*, in shares of 5*l.* The transacting of every description of commercial and trading agency, borrowing and lending money on land, houses, and other securities. The subscribers (who take one share each) are—G. Nye, Cumberwell; E. C. Nicholls, 18, G. Aborne road; W. A. Bennett, 19, St. Paul road; H. W. Wheeler, 49, Cannon street; C. Bennett, Hammersmith; G. Ives, Hammersmith; W. Marshall, Kilburn.

THE ST. JOHN'S GAS COMPANY (Limited).—Capital 35,000*l.*, in shares of 10*l.* The acquiring of gasworks in Porto Rico, with the plant and effects, and to carry on the manufacture of gas. The subscribers (who take one share each) are—R. J. Smith, Braham Hill; E. Corry, 8, New Broad street; J. Spencer, Irthingborough; H. Smith, Northampton; H. J. Rowe, Tottenham Mews; D. Hodge, 100, Hatton Garden; D. R. Tomson, St. Neots.

THE LIFE ASSURANCE COMPANIES' FIRE OFFICE (Limited).—Capital 10,000*l.*, in shares of 5*l.* The transacting of fire insurance in all its branches in Great Britain and Ireland and elsewhere. The subscribers (who take one share each) are—H. D. Stead, 9, Fenchurch street; C. R. Crouch, 75, Old Broad street; H. Maclean, 9, King's road, Bedford row; W. J. Bailey, 24, Chancery lane; T. K. Stead, 4, Water lane; G. Lund, 24, Martin lane; W. R. Plowden, 23, Manchester street.

MANUFACTURERS' FIRE INSURANCE COMPANY (Limited).—Capital 50,000*l.*, in shares of 2*l.* To make, grant, or effect insurances on property of every description at home and abroad against loss or damage by fire. The subscribers (who take one share each) are—E. H. Henry, 1, Queen Victoria street; J. B. Pearson, Brixton; H. E. Bishop, 5, Salt-r's Hall court; C. Bennett, Hammersmith; V. M. Elkington, 35, Liverpool street; H. H. Roche, 57, Lamb Conduit street; W. H. Scott Holloway.

PONSARD'S STEEL PATENT COMPANY (Limited).—Capital 300,000*l.*, in shares of 20*l.* To purchase certain patents from A. Ponsard for improvements in the manufacture of steel, and to manufacture and sell the preparations which are the subject of these improvements. The subscribers (who take one share each) are—J. F. Copeland, Penge; T. Sissons, East Dulwich; E. M. Pizram, 30, Upper Tollyington Park; W. W. Garthwaite, Islington; A. A. Hardie, 23, Upper Tollyington Park; A. C. Argles, South Kensington; A. B. Crumfall, 83, Gracechurch street.

THE SANDOWN PIER HOTEL COMPANY (Limited).—Capital 10,000*l.*, in shares of 10*l.* The purchase of the Royal Pier Hotel, Sandown, Isle of Wight, with battery house and land adjoining. Carrying on in the said hotel and battery house the business of hotel and tavern proprietors, and wine, ale, and spirit merchants. The subscribers are—H. J. Webb, West Cowes, 50; W. Edmonds, 5, Southsea, 25; W. H. H. Blake, Winchester, 10; T. Pain, Winchester, 300; C. G. Wood, Blackheath, 50; J. P. Robinson, 81, Gracechurch street, 1; A. Jephson, Bournemouth, 50; C. Pain, Micheldever, 10; J. Harris, Winchester, 10.

THE ASTON STEAMSHIP COMPANY (Limited).—Capital 10,000*l.*, in shares of 1*l.* The purchasing and construction of steam, sailing, or other vessels. The conveyance of passengers and goods. The subscribers are—A. Ward, Haverdon, 200; W. H. Gladstone, M.P., 41, Berkeley square, 130; J. Meek, Middlethorpe Lodge, York, 130; E. F. K. Fortescue, Stratford-on-Avon, 130; M. J. Fielden, Reform Club, 130; J. S. Mack, 43, Castle street, Liverpool, 240; J. Wilson, jun., Belfast, 240.

THE GOTHENBURGH TRAMWAYS COMPANY (Limited).—Capital 50,000*l.*, in shares of 5*l.* To purchase or otherwise acquire a concession to construct and work tramways. The subscribers (who take one share each) are—C. E. Davison, Twickenham; W. T. Bourne, Worcester; W. Mousley, Westminster Chambers; C. Selby, 23, Queen Victoria street; A. G. Gifford, 14, Hereford road; C. Stretton, Leicester; W. Wood, 23, Queen Victoria street.

THE WALTON COCOA-ROOM COMPANY (Limited).—Capital 2000*l.*, in shares of 1*l.* To establish houses, rooms, street stalls, and other places of a like nature in Walton and neighbourhood, and to carry on the business of general refreshment-house keepers, no wines, beer, or spirits to be sold or consumed. The subscribers are—J. W. Clark, Walton, 15; G. L. Campbell, Walton, 5; H. Baker, Walton, 15; T. Satherst, Walton, 10; T. Morris, Walton, 10; W. Thomas, Walton, 20; P. W. Marsh, Aintree, 10.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Ten years ago the weekly information which had previously been published for a great number of years in *WATSON BROTHERS' Mining Circular* was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the *Journal* on the Clementina Mine.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1845, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1852), "Cornish Notes" (second series, 1853), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1845, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to four o'clock.

That they also buy and sell shares for immediate cash or for the usual fortnightly settlement in all Mines dealt in the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of 2*l.* 2*s.*

D'ERESBY MOUNTAIN.—We were able to announce in our last that we had just received a telegram from Mr. Parry, the secretary, informing us that rocks of almost solid lead were coming up from No. 5 under the big steps in No. 4.

When the great Gorse lode was found in No. 4 the grand speculation, as we have always stated, was to see the lode at the deeper level, No. 5. The story of the old men who had heard from others who had worked in it was, that while raising large quantities of lead—100 tons per month—from No. 5, and even below it, for which they had actually erected a water-wheel underground, the level fell in (a thing very probable with a lode of such great width), crushed their water-wheel and timber supports, and stopped all their works. To prove this the present company had to obtain the grant of the valley sett, and clear up the No. 5 level, which when commenced it was thought would not occupy very long; but it was found broken in, and in such a state that it has taken over 12 months to clear the 300 fms.; and beside this the Gorse shaft had to be sunk from the surface down to No. 5, to aid the work.

It is now found that the level, over 14 ft. wide, had fallen in, and is now a wreck of broken timber, which is being cleared away, and fresh supports erected. Among the debris found on Saturday was one of the greatest curiosities we have seen for a long time—an iron borer 12 in. long, embedded in 8 in. of solid lead. It is much corroded, and has, probably, been lying in the debris for upwards of a century. Everything, in fact so far as seen, goes to prove the great size and richness of the lode at No. 5; and it is the general belief among the agents and men that there is a great future for the mine. We have for some months past been disappointed at the slow progress in dressing lead, and the explanation given us was that some old workings at the top of the No. 4 steps had given way and covered the rich stuff which we, and so many others, saw in the steps 12 months ago, and that it was this poor stuff we were crushing. The secretary, who went down the No. 5 to see for himself last week, now tells us a new light altogether has been thrown on this matter. The great steps, it now appears, was left by the old men as the support over these extensive workings below, and not only did the top fall in upon our steps, but the rich ore first broken—and which we saw—has fallen down towards No. 5, and is not yet reached. Those working in the steps tell the agent that in one "surge" the whole mass of ore broken went down 10 ft.

The heading of the great Gorse lode runs through D'Eresby Consols, and the whole of the lode for 300 fms. long is in Aberllyn, where it is yielding at present great quantities of blende. Thus its richness in D'Eresby Mountain may have its effect in these mines.

Since the above was written the agents write (see their report) that the old wheel has been met with among the debris, thus fully confirming all that has been said about it; while the masses of lead standing by the sides show how rich the lode must have been. We have now to see how far the old men sunk below the No. 5 level, where they evidently had the richest ore. There is a portable engine belonging to the company in the Gorse shaft which could to a great depth pump the water up to No. 5.

D'Eresby Mountain has this week sold (computed) 30 tons of lead ore at 7*l.* 3*s.* 6*d.*, delivered at Llanrwst. A sample of the ore, as delivered to the smelters, was assayed by Messrs. Claudet, and produced 81 per cent. of lead.

CLEMENTINA has sold 6 tons of lead ore at 7*l.* 13*s.* 6*d.* per ton. This was got from the adit level, while erecting the big wheel which has now got to work.

ABERLYN.—When on the mine with Capt. Rowe, in May last, we had, as we stated at the time, some thought of putting out a cross-cut

in the valley, adjoining the Cwm Lanerch sett (which in the railway cutting near by yielded, we believe, some thousands of pounds worth of lead), but seeing that the company now working Cwm Lanerch were themselves driving to the lode to be seen near the surface in Aberllyn we resolved to wait and see the result of their trial at this point. Mr. Parry now writes us: "At Cwm Lanerch, which adjoins Aberllyn on the south, a fine lode is now being worked on 12 ft. in width, containing large and rich ribs of lead. This lode, from its bearing, enters Aberllyn (as seen at surface) 17 fms. west of the Gorse lode, runs north-west, and is within 60 fms. west of the Gorse lode, at the middle adit level (up the hill). At this level, it appears, a cross-cut has already been driven 50 fms. or more by old men, evidently to cut this lode, and in the extreme end there are now indications that a lode is near at hand." Four men, therefore, have this week been placed in this cross-cut, and as it will reach the Cwm Lanerch lode at a good depth, a great discovery may soon be made here independent of the Gorse lode.

PENSTRUTHAL.—We have received several communications from shareholders here. We always had a good opinion of the mine itself, and had the shaft been sunk good results might have been realised long ago. This mine, as we may show when we have more leisure, has been one of the richest in Cornwall for copper ores, like other rich mines in the district; and is now in its transition state towards tin, and for this depth is required. If the company is wound-up and reconstructed on a proper basis we should advise shareholders to join it by all means, and they may be rewarded before long.

WHEAL CREBOR.—We do not go in for the market, but for the mine, which will soon tell its own tale.

D'ERESBY CONSOLS.—The directors' report, we understand, now in the hands of the printers, will be out on Monday. The accounts in the hands of the auditor show a cash balance of rather over 2700*l.*, and no liability beyond the current month's cost. The discovery at No. 5 at D'Eresby Mountain adds to the prospects there; and, according to the cross-cut towards the lead lode referred to at Aberllyn, that lode also must run through D'Eresby Consols.

SHARES.—It is several months since a transaction took place in shares either in D'Eresby Mountain, D'Eresby Consols, or Clementina, and, therefore, we ceased to give mere nominal quotations. What they are now it is difficult to say; no price whatever would induce us to sell the former until we see the result of No. 5. The machinery on the mine is capable of dressing 4 tons of lead a day, and we hope ere long No. 5 will supply it. At D'Eresby Consols we cannot be far off the Cobblers lode, and there are only 1280 shares in the mine—so that we should look for a good rise if the lode equals expectation. The cross-cut, like the No. 5 level at D'Eresby Mountain, has taken longer than anyone expected. We have no means of obtaining information as to the other mines referred to by our correspondent.

PARYS CORPORATION.—We do not believe it is possible to find a more experienced or a more economical manager of a mine than Capt. Mitchell. There is nothing, it is said, "so successful as success," and when ore is reached in the 90 cross-cut the agent will be properly appreciated.

MR. WILLIAM H. H. WATSON begs to offer his advice and services to Shareholders and Intending Investors in Mines, and in the Purchase and Sale of Shares. Has Special Business in WHEAL CREBOR; and 25 shares in ARENDAL FOR SALE at £3*l.* net, £4 paid.

Address: W. H. H. WATSON, 1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON, E.C.

Mining Correspondence.

BRITISH MINES.

ABERLYN.—John Roberts, July 21: We have just reached the forebrent in the deep adit on the shale. We have discovered in the roof a branch of very soft blende, very pure, about 8 in. wide. This is just under the course of blende on the shale at No. 2 adit, and no doubt the same. As the old workers found the lead in the shale and associated with the blende, I do not think it would be a bad plan to put up a rise here, as there would be a chance of finding lead as well as blende. At No. 2 I have put four men to drive the cross-cut west in order to cut on of the other lodes, which will very likely prove to be productive of good lead, as it is the Griffin Mine below. There is no change in the lode on the shale part at this level.

BLUE HILLS.—S. Bennett, P. Vian, July 19: The lode in the Blue Barrow shaft below the 30 is about 1 ft. wide, and worth 7*l.* per fathom. In the 30 east end it is 2 to 3 ft. wide, but is not quite so strong as it has been, and worth about 4*l.* per fathom. A slope in the back of this level is worth 7*l.* per fathom, and two steps in the bottom 10*l.* and 12*l.* per fathom respectively.

CAMBRIAN.—Thomas Glanville July 19: Esgar Fraith: In the 88 yard level, driving east of eastern shaft, the lode is yielding 5 tons of copper ore per yard. In the 70 yard level, east of shaft, the lode is yielding 2 tons of copper ore per yard. In the 45 yard level, east of shaft, the lode is yielding 1 ton of copper ore per yard. The other parts of the mine are without alteration to report on. I can truly say the mine never looked so rich as at present.

CLEMENTINA.—John Roberts, W. Sandoz, July 23: Monthly Report: We are glad to be able to state that the large water wheel and all its connections for pumping from the engine shaft have been completed, and all our arrangements answer our most sanguine expectations. By to-morrow we shall have forced out all the water from the engine shaft, when we shall at once replace the small lift from the 25 to the 34 by the large one, which has been got especially for that place, which will require two or three days only, and by Monday we expect that the mine will be dry again. We find by a practical test that the large new wheel will do five times the amount of work as the old wheel, with only two-thirds of the amount of water, by which we are satisfied that we have now sufficient power for pumping for all seasons. We have put the pumps down into the roadside shaft, and shall at once make the rods ready and connect the large wheel with them and get out the water. We hope that we shall find at the bottom of this shaft a fine bunch of lead. We assure in a few days to get the mine in full swing.

COMBARTIN.—T. Harris, T. Comer, July 21: The lode in the winze sinking below the adit level is not looking so well for lead as when last reported; the leader is about 15 in. wide, producing good patches of lead and blende, with white iron—saving work for lead, but not enough to value. The lode has a very kindly appearance, and we think the falling off of the lead is only of a temporary character. The men in the rise above the adit level are making fair progress with their work. The lode in the rise is large, containing principally quartz, with seams of blende, scotched with lead. The lode in the south east end on the counter lode, is 2 ft. wide, carrying beautiful-looking quartz, in which we find blende, white iron, and a little lead—a very kindly lode. In the adit cross-cut the men are making fair progress with their drive, but we have no change to report in the character of the ground.

CWMYSTWITH.—July 23: In Gill's lower level driving west of No. 1 winze on the new lode, the part of the lode carried is 18 in. wide, composed of lead and blende, but not of sufficient quantities to value. The 15 fm. cross-cut driving north of Pugh's engine shaft, is now being pushed forward by eight men; no change in the ground. Gill's cross-cut north at Gill's upper level is suspended for the present. In a slope over Mitchell's level west on the new lode the lode is 3 ft. wide, and worth 1 ton of lead ore per fathom. A slope under Mitchell's level, east and west of western winze on the new lode, has a lode 4 ft. wide, and worth 16 cwt. of lead ore per fathom. In a slope over Mitchell's level, west of western winze on the new lode, the branch of lead in this slope is small but solid, and from the appearance of the ground ought to improve, which induces us to try it again for another month. In a slope in the back of Gill's upper level 1 ton lode, this slope has improved during the past month; lode now worth quite 1 ton of lead ore per fathom. In a slope over Level Fawr on the copper lode, the north branches and arches are yielding about 14 cwt. of lead ore per cubic fathom. In a pitch in the back and bottom of the 35 over Level Fawr on Kingside lode and branches, the lode in the bottom of the sink has improved; now worth 1 ton of lead ore per fathom. In a pitch in the back of the 15, east of Kingside shaft on Kingside lode and branches, the lode is producing 16 cwt. of lead ore per fm. In a pitch in the back of Kingside lode and adit level on Kingside lode and branches, the lode is 10 ft. wide, and worth 15 cwt. of lead ore per cubic fathom.

DE BOKKE.—J. Phillips, July 23: The main lode at the junction with the counter at the 25 east is divided into several parts, producing stones of lead and copper ores, and the counter has opened out to 24 ft. in width, and of very kindly appearance; the further extension of this point should not be lost sight of, but for the time I think it advisable to place the men to drive and stop on a deposit of ore which is making away west in a drift under and in advance of the 25. The slopes above and below the 25 are without particular change, and the ribbers working steadily. The machinery and pitwork are all right, but the floods are causing some difficulty at times to cope with the water.

DENBIGHSHIRE CONSOLIDATED.—R. Price, A. Francis, July 24: The 113 main lode driving east, we are glad to say, shows gradual but permanent improvement; it is now 1 ft. wide, and in the heading side of the vein to day we have taken down some rich ore, and have every reason to expect that by further advancement lasting deposits of metal will be made available. In various places in the roof we find some splendid lead ore, which we shall be able to work at considerable advantage, but acting up to your instructions (with which we entirely agree) we think it best to incur a slight further expenditure in the continuation of the level further east instead of stripping the ground while the price of the

WEST WHEEL PIVOR.—W. T. White, July 29: I am just come up from underground, and cannot speak of any change in connection with the lode. We took a pile of stuff drawn to surface yesterday, and the men this afternoon will be taking down some more, and to-morrow this will be added to it, when it will be decreed, and a sample taken for its assay. It is said to be a good one, and all this lode through the entire sett we intend at once to prospect on it about 100 fathoms to the west of our present engine-shaft. The shaftmen are making good progress in sinking now down about 9 ft. below the 13.

To each subscriber is offered a bonus of fully paid shares equal amount to his debenture subscription, thus for a £100 Debentu

are | ing on their business with repeated losses attending each transaction ; nevertheless
now that prices have been so considerably reduced, hopes are entertained that

port, continue to look well, and will sample next week at some
ore. Aberllyn, 10 to 11; Bettws-y-Coed, 15a. to 20a.; Clementine
1 to 1½; Denbighshire, 1½ to 2; East Van, 1 to 1½; Glenroy, 7a. 6

to 12s. 6d.; Leadhills, 1½ to 1¾; Pandora, ½ to ¾; West Chiverton, 1½ to 2; West Pateley Bridge, 2 to 2½; the agent writes—"The lode in the 56 north-west continues worth 4 tons of rich lead per fm." West Holway, 1 to 1½; Caron, 2 to 2½; Frongoch, 1½ to 2; Grogwinion, 2½ to 3; Hartington Moor, 1½ to 2; Crosswood, 1 to 1½; Mawston, 1½ to 2; Red Rock, 1½ to 2; St. Harmon, 1 to 2; West Wye Valley, 1½ to 2; Wye Valley, 1½ to 1¾; Gwernymyndd, 2 to 2½.

FOREIGN MINES.—Arendal, 3 to 3½; Blue Tent, 2 to 2½; steady washing goes on here, and water is abundant. Cape Copper, 27 to 28; Chontales, ½ to ¾; Colorado, 1½ to 1¾; Canada Gold, 2 to 2½; Ruby, 2 to 2½. St. John del Rey, 260 to 270; the advices for June show a profit of 6400L. The produce for the first division of July, 4650L. Placerville, 2½ to 2¾; all working underground and at surface progressing satisfactorily. Don Pedro del Rey, ½ to ¾; Eberhardt and Aurora, 1½ to 2½; Flagstaff, ½ to ¾; Frontino and Bolivia, 2 to 2½; New Quebrada, 2 to 2½; Richmond, 7½ to 7¾; Santa Barbara, 1½ to 2.

The Market for Mine Shares on the Stock Exchange has shown no material improvement, and whilst miners continue to be paid so low a price for ores any such cheerfulness on the part of capitalists as would create an active market cannot reasonably be expected; the prospects, however, are decidedly better. The diminished business in metals between this country and France, which has resulted chiefly from the uncertainty that has prevailed with regard to the tariffs, will now probably cease to be a cause of complaint, for the French protectionists may be regarded as defeated; a Bill has been introduced by the Government in the Chamber of Deputies, and carried by a large majority, for provisionally prolonging existing commercial treaties and conventions which would otherwise have expired at the end of the present year. The fact is that in France there are for the moment no Cobdens, nor, indeed, any statesmen competent enough or even inclined to grapple with great commercial questions. The result is that all who have a voice in the Government content themselves with listening in order to learn and favour the stronger party. The iron and coal masters, and one or two other classes, are loud in their denunciation of free trade, and they are exerting themselves to the utmost to make it seem that the majority of the country is with them, but the French people as a body, and notably Paris, Lyons, Bordeaux, and Marseilles, fully comprehend that protection means to them an almost utter loss of trade which they now enjoy. The adoption of the principle of prolongation has given general satisfaction, and the consolidation of the Imperialists as supporters of Prince Jerome has not been without a good effect upon business minds. The more thoughtful Frenchmen, Republicans as well as others, regard the Imperialists as a good healthy opposition to the Republic, and acknowledge that a French Republic without that opposition would scarcely last a month, whilst with it there is the chance that it may continue for years, and that a revival of trade between the two countries may be the commencement of that general activity which all so much desire.

Australian, ¾ to 1½; the company have an available balance of 2419L, out of which it is proposed to pay a dividend of 2s. per share.

The Anglo-American Food Supply, General Stores, and Trading Company is in course of formation, with a capital of 150,000L, in shares of 1L 10s. each, to establish stores in London and elsewhere, where will be kept a full and varied supply of the principal products of America, Canada, the Colonies, and other countries, to be sold at a low price for cash. It is well known that America and Canada have long been among the principal sources of food supplies for the United Kingdom, and it is believed that by opening an establishment in London, such as is contemplated by this company, the public will be enabled to purchase all articles of food under one roof, and from first hands, at a much less cost than they are now sold for. The prospectus will, it is said, be shortly advertised, when further observations respecting the project will be made.

The Inter-oceanic Canal Universal Company, with a capital of 800,000 shares, of 500 frs. (20L) each, has supplied its English prospectus to its London agency, for the use of intending English investors. The importance and objects of the enterprise were pointed out in the *Mining Journal* a fortnight since. Five per cent. is guaranteed during construction, and the concession gives the company, by way of premium, 500,000 hectares of land, with any mines thereunder, in such places as may be chosen by the company. It is believed that the project will be a success. It is announced that the London and County Bank has received from Mr. Ferdinand Lesseps the required caution money on account of the Government of the United States of Columbia, so that the concession is now definite. The Credit National states the subscription for the 800,000 shares of the Universal Company for the canal will be opened on Aug. 6 and 7, and that it will be well received, as it deserves to be. Are the squalls which come from America and trouble the ocean for any special object? It is thought not. But it is believed that the large financial institutions of Paris which have given their support to the project have desired to sound the depths of the sea of finance, and to draw from their clients all the subscriptions without having recourse to the outside public. In case of success these shares would be re-issued at a premium, whilst if the public be cool there is sure to be a time to warm them up by regulations. The affair will stand firm, or at any rate, will not fall into the water. It is considered that the stock will go to a small premium as soon as it is issued.

St. John del Rey, 260 to 270; the latest telegram from the mines at Morro Velho, dated Rio de Janeiro, July 21, states the produce for the first division (11 days) of July was 12,000 oits., of the value of 4650L, the ley of the ore being 5.8 oits. per ton. The profit for June was 6400L. All going on well.

Old Telegraph (Bingham) shares are quoted 470 frs. in Paris, but an attempt to dispose of some of them in London at much below that price is said to have failed. According to latest advices the mine is now making considerable shipments of ore valued at \$60 a ton, the proportion from the Bingham mines being double those from Germania, and four times as great as from Chicago. These facts are referred to as showing the importance which the workings have attained since the French company took possession. It is mentioned that "there is in Utah besides the Old Telegraph, which is not known as the Bingham except at Paris, another series of Bingham mines which are very well known in the district; but these latter produce gold, one of them—the Stewart—having more in sight than can be reduced at the smelting works in five years. This field of gold (and not of silver-lead, like the Parisian Bingham) is recognised as being of unparalleled richness."

Richmond, 7½ to 7¾; the usual telegram from the mines at Eureka, Nevada, states that the week's run was \$55,000 from 1071 tons of ore. During the week the refinery produced doré bars to the value of \$45,000. The manager (July 2) writes that operations both in the mines and smelting works have been carried on with the usual regularity without any material change to report. The 200 cross-out has very much improved, and looks more favourable for ore. The 600 drift from north cross-out is not looking so favourable as it was. The chambers are without any material change since last week.

In Hydraulic or Gold-Washing Companies shares there has been no variation worthy of notice. Blue Tent, 2 to 2½; washing is being steadily pushed on, and at date of last advices there were no indications of water failing. Local advices say, "the weather in the interior continues favourable to mining operations, the snow lingering on the mountains, and keeping the hydraulic claims well supplied with water." Placerville, 2½ to 2¾; good progress is being made in all departments of work, both underground and at surface, and the prospects continue encouraging.

Lead Mine shares have been considerably more in request, and in many instances important advances in prices have been obtained. This is attributed to a general improvement in the prospects of the lead trade, although no increased activity worth consideration has yet taken place. From the result of the Van sale on Thursday it is certain that the downward course of the prices paid by the lead smelters has been arrested. The average price received by the company for their June ores was 9L 6s. 3d. per ton, whilst on Thursday they received almost exactly 9L 8s. per ton all round, the 300 tons realising 2818L 18s. 6d. No blende was sold. The shares are quoted 14 to 15, and buyers preponderate. The usual monthly report will be found in another column. It seems that the D'Eresby Mountain district is the next that is going to create a noise in the market. It appears that at the mine from which the district takes its name rocks of almost solid lead are being obtained in the deepest adit, under the big stope, and the company has this week sold a parcel of ore containing 81 per cent lead, according to Claude's assay, for 7L 3s. 6d. per ton—a very fair price, considering that it is delivered at Llanrwst. This favourable state of things has naturally given great encouragement to holders in the adjoining mines, one of which is estimated to have 300 fms. of lode to work upon. When the companies were formed there was much angry discussion as to which particular sets had particular lodes, but, if the reports are to be relied upon, it seems that there are many more than one rich lode in the district, and that energy and capital are alone required to make them remunerative to those concerned. Clementina has also sold a parcel of lead at 7L 13s. 6d. per ton, and presumably delivered at Llanrwst.

Mineral Corporation, 11½ to 12½; the proceedings at the annual general meeting were of a very satisfactory character, those present expressing themselves well pleased with the progress made. It was shown that during the year they had driven levels 80½ fms., stope 30 fms., and risen winzes 19 fms., as well as cleared 20 fms. of shaft and 163½ fms. of adits. This large amount of work was regarded as the more gratifying, inasmuch as it was performed during the preparatory operations, and before the rock-drills and other appliances used in modern mining for getting the maximum of work done by a given number of workmen were running. Henceforward the progress will be much more rapid, for all the plant is ready for starting the rock-drill at Great D'Eresby this month. The engine, compressor, and air receiver, pipes, &c., of the Schram drill are on the mine, and also a fine 2-horse power boiler which the company have lately purchased. Captain Bennett is sanguine that they will have a fine property in their group of mines, and as recent discoveries in neighbouring mines prove the district to be rich this opinion would seem to be fully justified. At Hafza the crushing machinery will, it is believed, be ready in less than a month, and they are making rapid progress

with the jiggers and other dressing machinery. The advantage of using water-power, when obtainable, instead of steam is obvious, and in this respect the engineers of the Corporation seem to have given full attention to the natural resources. They have made a reservoir which will give an area of 2½ acres of water 9 ft. in depth. They have a fine 30 ft. water-wheel for the crusher, and a smaller (18 ft.) wheel for the dressing floors. Capt. Bennett estimates that they have about 50 tons of lead and blende (the greater part lead) broken and at bank ready for the crusher, and they have discovered, between Nos. 1 and 2 rises in No. 3 adit, about 300 tons of ore ready to be broken down and prepared for the market as soon as the crushing machinery is ready. The retiring directors—Mr. J. W. Williamson, Col. C. G. Perceval, Mr. W. Arthur, and Baron de Cèbre—were re-elected, and Mr. Edward Ashmead was re-appointed auditor.

Grogwinion, 2½ to 3; a parcel of 100 tons of lead has been sold this week at 8L 4s. per ton. The general meeting of the company is to be held on the 31st inst. Caron, 2 to 2½; very encouraging news continues to be received from this mine, and the prospects in the deep level are all that could be desired. Frongoch, 1½ to 2; operations going on well at all points, prospects improving, and good returns of lead being made. Red Rock, 1½ to 2; a special meeting is to be held on the 31st. Mine looking well. Wye Valley, 1½ to 1¾; the deep levels show signs of further improvement, and the mine altogether looks well. West Wye Valley, 1½ to 2; no fresh news of any importance. Mawston, 1½ to 2; Hartington, 1½ to 2; Crosswood, 1 to 1½.

Rhyddallau are quoted 10 to 11; the mine, it is said, continues to open out well; they are making their returns and profits from only driving and sinking. It is to be regretted that the executive have been so dilatory in the completion of the registration of the company. It is stated that at Panty-Mwyn the works are being carried on with great energy. The ore ground opened up is very extensive, and when the day level is cleared, which will be in the course of a few months, a large number of additional hands will be put on to break ore. The shares are quoted 3 to 3½.

Subjoined are the closing quotations:—

Carn Brea, 21 to 23; Dolcoath, 24 to 26; East Caradon, ¾ to ¾; East Van, ¾ to 1½; Gwernymyndd, 4 to 4½; Glenroy, ¾ to ¾; Glyn, ¾ to ¾; Great Laxey, 14 to 15; Leadhills, 1½ to 1¾; Marke Valley, ¾ to ¾; Pateley Bridge, ¾ to ¾; Penstruthal, 1s. to 1s.; Roman Gravel, 7 to 7½; Rookhope, ¾ to ¾; Tankerville, 2 to 2½; Tincroft, 8 to 9; Van, 14 to 15; West Chiverton, ¾ to 1; West Pateley, 2 to 2½; Wheal Crebor, 1½ to 1¾; Almada and Tiritio, 5-6ths to 7-8ths; Birdseye, ¾ to ¾; Blue Tent, 1½ to 1¾; Canada Gold, 2 to 2½; Cape Copper, 27½ to 28½; Chontales, ½ to ¾; Colorado United, 1½ to 1¾; Don Pedro, ¾ to ¾; Eberhardt and Aurora, 1½ to 1¾; Exchequer, ¾ to ¾; Flagstaff, ¾ to ¾; Frontino and Bolivia, 2 to 2½; Hultfall, 1½ to 1¾; Kapanga, 1½ to 1¾; New Quebrada, 1½ to 1¾; Pastorena, 4s. to 5s.; Port Phillip, ¾ to ¾; Richmond Consolidated, 7½ to 7¾; St. John del Rey, 265 to 265; United Mexican, 2½ to 2¾.

At the Swansea Ticketing, on Tuesday, 1449 tons of copper ore were sold, realising 8185L 17s. 6d. The particulars of the sale were—Average standard for 9 per cent. produce, 75L 16s.; average produce, 10½; average price per ton, 5L 13s.; quantity of fine copper, 157 tons 14 cwt. The following are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper
July 8.....	1352	17 10	9	£ 4 17 0	10s. 8d.	253 10 6
" 24.....	1449	75 16	0	10½	5 13 0	51 18 2

Compared with the last sale, the decline has been in the standard 3L 2s., and in the price per ton of ore about 6s. 8d. The Betta Cove ore gave a produce of 8 11-16, and sold at 10s. per unit; Union, produce 10½, per unit 10s. 8d.; Virneberg, produce 12½, per unit 10s. 8d. There will be no sale on Aug. 5.

The directors of the London and County Banking Company have decided to declare at their usual meeting, to be held on Aug. 7, a dividend for the half year ended June 30 of 1L 16s. per share, being at the rate of 15 per cent. per annum, free of income-tax, and to carry forward 23,776L. This distribution is at the same rate as the previous payment.

The Master of the Rolls, in Chambers, has appointed Mr. Frederick G. Painter (of the firm of Tribe, Clarke, and Co., of Moorgate street Buildings) provisional official liquidator of the Mutual Dress Supply Association (Limited).

A petition has been presented to the High Court of Justice for the winding up of the Consolidated Land and Investment Corporation.

The Australian Mining Company propose to pay a dividend on Aug. 2 of 2s. per share. The balance in hand in London on June 15 was 361L. Since that date remittances have been received from the colony amounting to 2130L, making a total of 2491L.

With this week's *Journal* a SUPPLEMENTARY SHEET is given, which contains—Original Correspondence: Deep Mines; the London Coal Supply (W. J. Thompson); the price of Coal; a New Explosive—Titanite; Electric Deposition of Nickel; Cranstons' Rock-Drill (J. G. Cranston); Rock-Drilling Machinery (Le Gros, Mayne, Leaver, and Co.); Canadian Mining Notes—No. XXVII: the Isthmus of Panama Canal; Wind-Power Engines; Preventing Blow Holes in Cast Metal; Cornish Mining (C. Bawden); Cornish Mine Dialing; Is it Right to Pay any Purchase Money for Mines (A. Leon); Science of Investments (R. Tredinnick); Penstruthal Consols—Patent Steam Pumps; Penstruthal Consols; Parys Copper Corporation (T. Bush); the Llanrwst District; Llanrwst Mining; Mines in Cornwall and Devon (R. Symonds); Coal and Mineral Washing Machinery; English Iron and Steel Manufacturers at the Australian Exhibition; Foreign Mining and Metallurgy; the Scotch Mining Share Market and Weekly Report, and List of Prices, &c.

LEAD AND LEAD MINES.—The price of lead in America remains very firm at between 19L and 20L per ton, with a brisk demand. The lead supplies from Leadville and other sources have been considerably over-estimated, and are gradually falling off instead of increasing, as was anticipated. From present indications in the United States the lead market there is likely to rise still higher; this will have a favourable bearing upon the English market, and it is fair to presume that the rise in pig-lead this week from 13L 6s. to 13L 15s., and that the price will continue to gradually improve.

WEST PATELEY LEAD MINES.—Mr. Thomas Dineen, F.R.G.S., an eminent authority in the North of England, has recently inspected these mines. In the report, which appears in another column, the shareholders are congratulated upon the success of their undertaking. Referring to the recent extraordinary discovery on Craven Cross vein, Mr. Dineen says:—"When driven 18 fms. from the shaft the lode began to be productive, after which it gradually widened out for 14 fms., until it became a mass of solid ore over 2 ft. wide. At the forebreast the lode is nearly 2 ft. 2 in. wide, and for some distance it will yield fully 5 tons to the fathom, and from present appearances will widen out as they progress. A more promising lode it has never been my lot to see, and judging from surrounding productive properties the West Pateley Lead Mines are likely to yield a valuable harvest to the fortunate shareholders." Referring to the Golden Fleece section of the mines, Mr. Dineen says:—"The lode here is promising, and improves in depth, and, judging from present appearances, is likely to yield equal to the Craven Cross lode." The latest advices state that the Craven Cross lode in the 67, although the forehead is not yet under the perpendicular of the ore body in the 56, continues to improve, yielding patches of lead throughout.

BRYN GLAS (Lead, Cardiganshire).—Operations on an extensive scale will shortly be commenced here. The lode running through the grant is of great size and strength, it having already yielded lead ore valued at 50,000L. A fine course of ore is now left standing at the bottom of the shaft, estimated to be worth 40L per fathom. Several hundred fathoms (according to the statement of Captain Harvey) of profitable ore ground has been laid open. The machinery erected is of great power, and capable of pumping the water for sinking the mine and drawing the ores for many years to come. By sinking the shaft another 10 or 20 fathoms deeper, and extending the levels on to the junction of the lodes, little doubt is entertained by competent authorities that such a body of lead ore will be met with as has not been discovered in Cardiganshire for many years. The directors who have been appointed subscribe for a large portion of the shares, and the secretary is Mr. R. C. Coombs, who is also secretary to the Sentein Lead Mine.

BWLCH UNITED.—The new 50 ft. by 4 ft. breast-wheel has gone to work, and answers admirably all purposes for which it was erected. A never failing supply of water exists, hence the cost of fuel is wholly dispensed with. There is an abundance of rich silver-lead ore discovered, and the ground laid open will soon be well ventilated, so that several stopes may be set to work either at moderate tribute or at 30s. or 40s. per cubic fathom on tutwork. Should the executive determine on increased yield and sales during the present depression of metals far below their normal value there are ample resources at command. Mr. C. C. Marvin has been this week past at the mine, and his well-known researches and business habits will ensure economy while he is in conference with inventors and recognised mining engineers for the construction and

adoption of new processes for dressing and manipulating ores, which ensure great saving of labour and expense.

SALE OF WHEAL PRUSSIA MINE.—On Friday, at Tabb's Hotel, Redruth, Mr. John Thomas, auctioneer, offered this mine and materials in one lot as a going concern. There was a very large attendance, and much interest was manifested in the proceedings, a great many of the working miners of Wheal Prussia, who have not yet been paid their wages, being present, in addition to the usual frequenters of mine sales. Mr. Morgan, solicitor, read the conditions of the sale, one of the most important of which was the condition which compelled the purchaser to erect a 70 in. cylinder pumping-engine within the limits of the sett within twelve months. The auctioneer, in calling attention to the sett, said that it was in the same district as Wheal Pevor and West Pevor, and immediately joined the latter, and such a chance as the present rarely occurred in Cornish mining. The first bid of 500L, was by Mr. Alfred Lanyon, who subsequently advanced to 1500L. Capt. A. T. James, of South Franco, bid several times from 550L up to 1520L—the last best bidder but one. Capt. Rich offered 850L. Mr. D. W. Bain 900L and 1350L. The biddings gradually rose to 1550L, at which price it was knocked down to Mr. Edward A. Pearce, of Scorrier, the confidential agent of Mr. George Williams, of Scorrier House. It is stated that both Wheal Prussia and Pednandrea have been bought on behalf of the principal creditors, who, it is hoped, will thus recoup themselves for losses on the estate of the late proprietor. It is believed that the miners and labourers will now speedily be paid. The mine did not realise so much money as was expected. This is said to be a highly promising sett, large quantities of tin having been returned at a shallow depth by Capt. Tregay. Wheal Prussia, under the name of "East Treleigh Wood," was started by Mr. John Jose, of Mellington, and others in 1872; but no profits being made by them it was sold by auction and purchased by Capt. Tregay about two years ago. It was said at the time that Capt. Tregay had a capital bargain.

CAPPER PASS AND SON, BRISTOL

PURCHASERS OF
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD
BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA,
TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE
containing LEAD, COPPER, TIN, or ANTIMONY.

GEO. G. BLACKWELL,

5, CHAPEL STREET, LIVERPOOL,

PURCHASERS OF
MANGANESE, ARSENIC FLUOR-SPAR, WOLFRAM, BLENDE, CALAMINE, CARBONATE AND SULPHATE OF BARYTES, ANTIMONY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE, OCHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS TALC, PHOSPHATE OF LIME, &c.

AUSTRALIAN TIN—PRIZE MEDAL, 1877.

THE UNDERSIGNED IS PREPARED TO EXECUTE
ORDERS for the CELEBRATED

"KANGAROO" BRAND.

S. L. BENSUSAN.

Kangaroo Tin Works, Sydney, December, 1878.

HENRY WIGGIN AND CO.

(LATE EVANS AND ASKIN),

NICKEL AND COBALT REFINERS
BIRMINGHAM.

WANTED, an ENGAGEMENT as CERTIFICATED COLLIERY
MANAGER, by a Young Man of fifteen years' experience. Good surveyor, leveller, and draughtsman. First-class references.
Address, "R. C.," care of J. H. Williamson, Goldenhill, Stoke-upon-Trent.

WANTED, in first-class condition, a PAIR of 18 or 20 inch
WINDING ENGINES, with DRUM.
Particulars, and lowest cash price, to be sent to Messrs. T. and W. MORGANS, Civil and Mining Engineers, Bristol.

WANTED, a SITUATION as LEAD MINE MANAGER—
fifteen years' experience in Lead Mines. Has a good knowledge of the Bearing Measures; can use the compass, and draw plans of the workings, &c. Good references given.
Address, C. JONES, 51, Huffing-lane, Towneley, Burnley, Lancashire.

REDUCTION OFFICER.

WANTED, TO PROCEED TO CENTRAL AMERICA, a Person
acquainted with the TREATMENT OF AURIFEROUS ORES. Must have had at least two or three years' practical experience in a Gold Mine. Copies of testimonials ONLY to be addressed "C.," care of Messrs. G. Street and Co., 30, Cornhill, London, E.C.

NEW ZEALAND.

AN EXPERIENCED MINING ENGINEER AND GEOLOGIST
LEAVES ENGLAND on August 5th for professional business in the above colony, and will, consequently, be enabled to undertake additional work on very moderate terms. The best references given.
Address, "R. F.," MINING JOURNAL Office, 26, Fleet-street, London.

REQUIRED, by an Associate of the Royal School of Mines,
F.R.S., &c., a SITUATION in a SMELTING WORKS, or on a MINE, at home or abroad. Highest references.
Address, "A. R. S. M.," MINING JOURNAL Office, 26, Fleet street, London, E.C.

CANADA GOLD COMPANY (LIMITED).—
These SHARES CANNOT FAIL shortly to take a VERY IMPORTANT POSITION, and a GREAT ADVANCE in PRICE.
For full particulars, apply to JOHN BATTERS, 4, Austinfriars, E.C.

THE SANTA LUISA IRON MINING COMPANY (LIMITED).

IN LIQUIDATION.

ALL PERSONS claiming to be CREDITORS of the SANTA
LUIA IRON MINING COMPANY (LIMITED) are required, on or before the 1st day of September, 1879, to send a notice, containing their NAMES and ADDRESSES and the particulars of their DEBTS or CLAIMS, addressed to the Liquidators of the Santa Luisa Iron Mining Company (Limited), 5, Queen-street-place, London, E.C.; or, in default thereof, they will be EXCLUDED from the BENEFIT of any DISTRIBUTION of ASSETS made before such notice shall be received.

WILLIAM COX, Liquidators.
JNO. R. FEILL, Liquidators.

Dated this 24th day of July, 1879.

ANTIOQUIA (FRONTINO) COMPANY (LIMITED).

Notice is hereby given, that the next ORDINARY MEETING of the shareholders of this company will be HELD at the City Terminus Hotel, Cannon-street, in the City of London, on THURSDAY, the 7th day of August, 1879, at Two o'clock P.M., for the following purposes, viz.:—

To receive the report of the directors, and the audited statement of accounts of the company to the 30th April, 1879.
To elect two directors.
To elect an auditor; and for other business.
And notice is hereby further given, that, after the business of the Ordinary Meeting, an EXTRAORDINARY MEETING will be HELD, for the purpose of considering, and, if approved, passing the following resolutions, viz.:—
"That the capital of the company be increased by the issue of 5000 shares of the company of £1 each.
"That in the event of the resolution authorising the issue of the additional 5000 shares being confirmed at a subsequent general meeting of the company, and of the shares in question not being subscribed for by the existing shareholders, such shares be offered to those shareholders who may have taken, or may take, the company's debentures in the proportion of one fully paid-up share for every £1 of such debentures."
By order of the Board,
J. JAMESON TRURAN, Secretary.

184, Gresham House, Old Broad-street, London, E.C., 22nd July, 1879.

THE AUSTRALIAN MINING COMPANY (Incorporated by Royal Charter).

Notice is hereby given, that the THIRTY-FOURTH ANNUAL GENERAL MEETING of the Shareholders of this Company will be HELD at the Guildhall Tavern, No. 33, Gresham-street, E.C., on MONDAY, the 28th instant, at One o'clock P.M. precisely, to receive the report, accounts, and balance-sheet for the past year; to elect directors in lieu of Walter J. C. Cutbill, Esq., and Frederick Collier, Esq., who retire by rotation, and offer themselves for re-election; to fix the remuneration of the auditors for the past year; to elect auditors for the present year.
By order,
U. P. HARRIS, Secretary.

No. 1, Coleman-street Buildings, Moorgate-street, E.C., 11th July, 1879.
The Transfer-books will be closed from the 17th to the 31st instant, both days inclusive.

C. H. WALKER AND CO.,

MINING AGENTS AND ENGINEERS,
VALPARAISO AND SAN IAGO
CHILE.

Notices to Correspondents.

* * * Much inconvenience having arisen in consequence of several of the Numbers being the past year being out of print, we recommend that the Journal should be kept on receipt; it then forms an accumulating useful work of reference.

AMERICAN LEAD PRICES.—"A. B." (Nenthad).—The quotation 4c. for lead represents the price per lb. The readiest means of comparing it with the price per ton in English money is to consider 1c. = 4d. 10s. per ton; therefore, 4c. will be 18s. per ton at the place where quoted. It is the same with copper quotations.

IMPORTANT NOTICE.—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one-fourth. Henceforth the subscription will be 1/10s. 4d. per annum (20 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Serbia, Sweden, Switzerland, United States, Malak, Turkey, Morocco, Tunis, and the Canary Islands. Spain 1/10s. 30 frs.)

Received.—"W. Y." (Glasgow)—"H. C." (T. H.)—"F. S. R."—"N. E."—"Shareholder" (Penrith)—"J. M."—"One who Hates Iniquity"—"Explosive"—"H. D. H."—"R. S." (Bristol).—Our reporter was not admitted to the meeting—"Shareholder" (Barnstaple).—Write to Mr. George Sparks, Ashburton—"W. D." (Plymouth).—"W. M."—"L. H."—"J. E. S."—Send an article on the patents; it will receive every attention—"Shareholder" (Wheat Grenville).—"G. H. P." (Bristol).—"Shareholder" (Italian and Spanish Mining Company).—"G. G. B." (Liverpool).—"J. T." (Cinderford).

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, JULY 26, 1879.

THE VENTILATION AND SANITARY CONDITION OF MINES.

Great attention has undoubtedly been paid to the question of the ventilation of mines by practical and professional men as by eminent scientific chemists who have carefully studied the physical laws relating to the movement of gases and ætiform fluids. We have had most elaborate treatises on the gases found in connection with minerals when removed from where they have been firmly rooted for thousands of years, and the most effective means of neutralising their injurious effects. Still, with all our knowledge of ventilation and the large quantity of air that can be forced into underground workings we are frequently reminded by explosions that, owing to some reason or other, the amount has been insufficient to render the gas powerless to inflict injury. In all probability it is not so frequently in the minds of managers of mines that, like all other bodies, gases have the property of dilating when their temperature increases, and contracting in becoming colder—so that as the volume augments with the temperature their gravity diminishes in the same degree, and on becoming colder *vice versa*. The actual amount of ventilation, based on the number of lights, persons, and animals in a mine, we are told is seldom taken into consideration by those who have to provide it, seeing that they look to a certain number of feet of air per minute traversing the workings and roads, without going into figures, which in some instances certainly may be unnecessary; but in most instances it would be well were a calculation made as to the quantity of pure air required to supply the lamps and lights as well as the persons employed with a sufficiency of oxygen. The combustion of lights and the breathing of men and animals lead to an excess of nitrogen, and so renders the air unsuited to either and so causing miasma. The consequence is that the respiration forms steam and creates gases, to which the former name of miasma has been applied. It is, therefore, essential that there should be a constant and certain quantity of pure air sent from the surface sufficient to apply the oxygen being constantly absorbed by those breathing in mines as well as to meet ordinary contingencies, such as gases given off by the removal of the strata. Some mines, of course, require more air than others, from the blasting of some minerals with powder. The latter at times gives off carbonic acid, carbonic oxide, carburetted hydrogen, and steam, as well as the fumes of sulphate of potash, which seriously affects the respiratory organs, rendering an immediate supply of fresh air requisite. In some metalliferous mines we have sulphuric acid, as well as arsenical, mercurial, and other vapours, all highly injurious. In mines generally we find carbonic acid is principally caused by the breathing of men and animals, the combustion of lights, and the putridity of animal and vegetable matter, and when more than 8 per cent. of it is mixed with the air the lights are put out, and suffocation follows, so that it extinguishes both lights and life.

This gas not only comes out of the mineral but from fissures in the earth, and after an explosion is found near to the floor, falling by its specific gravity. Carburetted hydrogen or fire-damp has been too frequently alluded to by us, and its dangerous properties pointed out, to again require lengthy or even special mention. It is extensively given off in coal mines, and ignites at a naked light, as it did recently at Blantyre, where matches used by the men for lighting their pipes with no doubt led to the explosion and loss of life. Indeed, anything more reckless could not well have been conceived, for it can only be compared to having a smoking saloon in a powder magazine, with the loose powder lying about in all directions. Under such circumstances in a mine known to be so fiery, and where a terribly fatal explosion had not so long previously taken place, such a catastrophe was only what might be expected. Still the mixture was an explosive one, and certainly not fit for breathing. In metalliferous mines, it may be said, but little gas is given off, although the vapours are in many instances injurious. In some of them, however, the necessary air is obtained by natural ventilation, and at times the temperature of the rock and other contributing circumstances causes the air to descend the deeper shaft in the winter, and just the reverse in the summer when it descends. At times when this change takes place the workings become charged with noxious vapours and gases; hence the necessity in such instances to obtain a uniform current all the year round, as could be easily done.

Having said so much as to ventilation, we venture upon another important question with respect to mining, and one that is at the present time receiving a great deal of attention from mining engineers—that is, the quantity of fresh air which should be supplied to every man whilst underground, as well as that for maintaining the lights and other purposes. On this subject there is considerable divergence of opinion, as might be expected. But although a good deal has been written relative to it, we do not consider that it has received that amount of attention from mine managers that its importance deserves. Yet by a full and accurate knowledge of it a much better idea would be obtained as to the quantity of fresh air that should be sent every minute into the workings of a mine than by pursuing a sort of haphazard system. They would also ensure uniformity, and the workmen would no doubt soon find out the difference, instead of at times being in a cool and comparatively pleasant atmosphere, and again, in one either highly charged with gas or noxious and highly injurious vapours. As we have before stated, this subject has lately and is now receiving a good deal of attention on the part of those connected with our mines, so we purpose going into it a little more fully than we might otherwise have done, although its importance cannot be questioned. As to opinions with regard to the provision of air for workers, we find that Mr. T. E. TAYLOR, when before a Committee of the House of Lords, in answer to a question as to what would be the least current of air with which he would be satisfied in any of the pits under his management, said that would depend upon the mine itself. In one that yielded no fire-damp, with from 120 to 130 persons employed in it, he should say that a current of 20,000 or 30,000 cubic feet per minute might be a fair quantity when properly conveyed to the face of the workings and made to sweep those dis-

tricts were the people where employed, but in a fiery mine he should require very much more than the quantity named. The statement shows that quantity of air should be given in some of those mines giving off large quantities of gas and employing some 500 or 600 men and boys. In the evidence at times given before coroners when inquiring into the causes of explosions, jurymen and the public are informed that as much as from 50,000 to 80,000 ft. of air went through the workings every minute, and from the vastness are impressed with the idea that the ventilation must have been very good indeed. But we are not aware of any witness ever having been asked what he considered was a sufficient quantity of air that should have been supplied to each man and boy, as well as for the lights and gas given off. These are essentials that in our opinion have hitherto been overlooked, otherwise what was supposed to have been more than sufficient for all ordinary purposes, owing to its apparent magnitude, would have turned out to have been considerably less than what ought to have been supplied to each individual. Another high authority, Mr. RICHARDSON, some years ago went into more elaborate details as to the quantity of air required for vital and chemical purposes per hour in mines. His estimate was—

For breathing	84.0 cubic feet per hour
For displacing carbonic acid.....	62.8 " "
For diluting nitrogen	258.4 " "
For displacing perspiration	27.0 " "

To the combustion of one light...	59.3 cubic feet
For one-fifth of that needed for a horse	517.0

1008.5

This, it appears, agreed in the main with the estimate of Dr. HURCHINSON, but scarcely provided sufficient for diluting the gases to a point where they would not be injurious, nor for the air after it was breathed, according to some experts. The late Mr. H. MACKWORTH, the Government Inspector, who had paid a great deal of attention to the subject, stated that from his long experience, and after having examined and measured the ventilation in many mines, he considered, when there was no escape of fire-damp and little of any other mineral gas, that 100 cubic feet of air per minute for each man and boy was the minimum quantity essential for sanitary purposes alone. As to the amount of fresh air that each person should inhale, Mr. HORTON, in his well-known treatise, gives it that a man inhales 135 gallons of air per hour, which amounts to nearly 22 cubic feet per hour, whilst Dr. SMITH calculates it at 37.7 per hour. However, from the figures we have adduced it will be seen that the necessary air requisite for a mine employing a certain number of hands can without difficulty be calculated, and that in future investigations as to the cause of colliery explosions the point will not be overlooked by those engaged in the enquiry.

But there is another subject in connection with mines, irrespective of gases, which requires more attention than has been paid to it, and that is the sanitary state of mines apart from gases. There is no doubt but that the health of the miners generally is seriously affected by the stagnant matter which is left to putrefy near to his working place. On this point it was stated by an eminent Government Inspector, in tracing out the remedies to be applied to render the cell of the miner a fit place for human beings to pass a large portion of their life in, that it required no other remedy except in a higher degree than we were now adopting on the surface. The same rules of ventilation and the same habits of cleanliness would suffice. Their condition was much in the same manner as a portion of some towns inhabited by the poor, and unvisited by professional or intelligent men—it would infallibly become the stronghold of disease. It is to be feared these remarks apply to a great many places, although one never hears of sanitary inspection as relates to mines. Sanitary rules, however, it is evident are as necessary for the miner in his working place as they are for the healthiness of his house and household. It may not be easy to enforce cleanliness and other sanitary matters in a mine, but were it done the miner would be in a condition to perform a great deal more work in a given time, and live to be a much older man, so that his actual value would be much higher than it now is, owing to increased strength and longevity, which would inevitably result from his working in a place where the sanitary arrangements were such as could be desired.

Much in this direction remains to be done, but under any conditions a great deal must depend upon the miners themselves. There is certainly no reason why the places underground should not be far more healthy than they are, and the report of the committee of 1842 fully verified "that a mine when properly ventilated and drained, and when both the main and side passages are of tolerable height, is not only not unhealthy, but the temperature being moderate and very uniform, it is considered as a place of work more salubrious and agreeable than those in which many kinds of labour are carried on above ground." But to secure this it will be seen that something more is required than sufficient ventilation.

EXPLOSIONS IN MINES.

During the first half of the present year it appears that 99 lives were lost by explosions of fire-damp in coal mines, which makes the average considerably lower than for the same period of last year, whilst it is four times more than the total of 1877. In the accident that took place in 1879 it is evident that they were all preventable, being the result of inefficient or careless management, or actual recklessness. The explosion at Dinas, by which 63 persons were killed, showed that the management was of a peculiar character, the man in charge having been for inefficiency suspended from the chief position, and placed, apparently, in a subordinate one, but still gave the orders for the working of the colliery. Then, in connection with it, we had the extraordinary fact that the sub-Inspector of Mines, who was the chief complainant, and whose evidence was looked forward to with a good deal of interest, gave up his Government appointment to become the manager of Dinas. The next explosion of any magnitude took place in March, at the Dripping Well Pit, near Wakefield, when 21 men and boys were killed. In this case the certificated manager held other appointments, and carried out the management at his place of residence at Wakefield, three miles from the colliery, by receiving daily reports from deputies, and on them issuing his instructions. At Hem-corth, near Barnsley, five men were killed at the Fitzwilliam Colliery, where blasting was carried on, and this, it was considered, led to the explosion, which the owner afterwards abandoned. At Liversedge a man was killed by the firing of the gas, and the shot-firer, to show his recklessness, had his lamp open, and said that he was entitled to have it so, whilst there was a candle burning in the roof and a shot hole above it. The jury returned a verdict of "Accidentally Burned," with the wise addendum, as a recommendation, "that steps should be taken to prevent any explosions in future." Another life was lost in a colliery in South Wales where naked lights were used, despite the many fatal explosions that have taken place in that part of the kingdom. At Swadlincote, which may be termed the southern extremity of the great Midland coal field, a man was killed by the exploding of the gas. In this case it was alleged that the manager was to blame, and he was summoned before a local bench of magistrates and charged with not supplying the men in the pit with a sufficient amount of ventilation. The charge was declared to have been proved, and the manager was fined ten guineas and costs. At Dowsbury, a comparatively new mining district, five men were killed by an explosion, and here also, we believe, blasting was carried on. From this brief review of the fatal explosions in collieries that have taken place during the first half of the year 1879, the only conclusion that can be come to with respect to them is that scarcely one of them ought to have occurred, whilst in several instances not the men, but the officials, appear to have been the least considerate in carrying out the work in such a manner as to bring down danger to the minimum. However, there is some consolation that the number of lives lost during the six months was not so heavy as in the corresponding periods of many previous years.

Still it is sad to think, after the many warnings as to the necessity for the greatest vigilance, and the strict enforcement of rules, that so many lives should be lost in our coal mines from causes that are preventable, and that in less than 24 years the number of persons killed in mines from explosions alone was 5683, including 28 at Blantyre during the present month. The following figures show the number of deaths and the quantity of coal raised in each year, and the deaths per million tons:—

Year.	Number of deaths.	Tons raised.	Deaths p. million tons.
1856	236	71,787,552	3.28
1857	377	74,607,931	5.00
1858	215	73,725,895	2.90
1859	95	78,328,977	1.21
1860	363	82,662,702	4.37
1861	119	86,159,922	1.38
1862	190	89,476,828	2.13
1863	163	92,633,855	1.75
1864	94	95,122,919	0.89
1865	168	93,911,169	1.96
1866	651	100,728,881	6.46
1867	286	105,077,743	2.72
1868	154	104,566,959	1.47
1869	257	108,003,482	2.37
1870	185	112,875,725	1.63
1871	269	117,439,251	2.29
1872	154	123,393,858	1.24
1873	100	128,680,131	0.77
1874	166	126,590,108	1.31
1875	288	133,306,485	2.16
1876	95	134,125,166	0.70
1877	345	134,179,968	2.57
1878	586	132,612,063	4.40
1879 (July)...	127	—	—

Total... 5683

What strikes one most at looking at the above figures, is the great variation from year to year, and were the numbers analysed it would be seen that the great explosions shift from one place to another. In 1857 it will be observed that the death rate was very high; this was in consequence of about the first of the series of great explosions which have taken place. It occurred in the February of that year at Lund Hill, near Barnsley, when 189 lives were lost. The highest year of all was in 1866, when 366 persons were killed at the Oaks Colliery, and in the same locality again in 1875 something like 150 lives were lost at Swatthe Main. Since that year blasting in the district has been discontinued at most of the collieries, whilst the rules have been strictly enforced, so that, thanks to the Inspectors and managers during the three years ending in 1878, there were only 10 deaths from explosions in York-shire. In 1877 Scotland had a larger number of deaths against it than previously, owing to the Blantyre catastrophe, and last year Monmouthshire again took the lead with 268, whilst West Lancashire was credited with 204 killed, North and East Lancashire 45, and the western district of Scotland 22. As has been so frequently pointed out, the most fertile source of explosions of gas in past years has been blasting, and so it has been in 1879 so far as it has gone, and this will continue to be the case so long as it is tolerated as at present. Mr. WARDELL, the Government Inspector, has done all he could to discourage it in his district, and the result has been very few deaths; and if the Inspectors in other districts would take a like course, we should have but few explosions to report, and the public would not have to be appealed to for aid towards the families of men killed from accidents that are preventable.

OUR IRON IN AUSTRALASIA.

One circumstance of considerable significance is reported to us from Brisbane, the capital of Queensland. It appears that a motion was some time since introduced into the Queensland House of Assembly for placing on the estimates a sum of 5000*l.* to be paid as a bonus for the first 500 tons of ore produced from Queensland ores. This proposal has, however, been withdrawn in consequence of the depression prevailing in the iron trade in other parts of the world. In other words, the Queenslanders have come to the sensible conclusion that they can buy English and foreign iron upon cheaper terms than those upon which they could hope to make it for themselves; and, this being the case, our hold upon the markets of Queensland and the other Australasian colonies appears to be confirmed and strengthened for a well high indefinite period. It is quite clear from this that the low prices at present prevailing for iron are not an unmixed evil; at any rate, they chill competition in all other quarters and directions, and that is something. It would appear that what our ironmasters should do, then, is not to indulge in useless repinings at the low rates at which their products are now selling; but that their best and most sensible course is to endeavour to still further reduce the cost of production, so as to bring it within the selling price. We will not go so far as to affirm that this is a result which can be easily attained; but we contend that, at any rate, it is a result the attainment of which calls for the most persevering efforts.

The bitter and protracted wars which were waged between Great Britain and France 70 or 80 years since had the effect of interrupting the supply of sugar to France from the West Indies, and as the French are fond of good eating this appeared at first a great misfortune. But French ingenuity and perseverance turned the apparent misfortune to good national account. Efforts were made to extract sugar from beetroot, and these efforts were crowned with such signal and enduring success that beetroot sugar is made in France upon a large scale to the present moment, notwithstanding that all difficulties in the way of a large importation of West Indian sugar into France have long since vanished. So it may yet be with the British iron trade. The extraordinary difficulties against which that trade has had to contend for many weary months—and even for many weary years—may have the effect of greatly cheapening production; and if this should be the case, and the quality of the iron or steel made is not allowed to deteriorate, our ironmasters may yet find that the hard times of 1874-9 have had the effect of really strengthening their position among the iron-producing nations of the world.

These are times when we hear a good deal of Belgian and American competition. But how can Belgian or American ironmasters hope to compete with the British iron trade upon such distant markets as British India, Australia, South America, or even some parts of Europe? If they choose to give their products away they may, certainly, damage us; but we can conceive of no other circumstances and conditions upon which they can do us any real harm. Even upon American markets English rails have reappeared to a small extent this year, notwithstanding the severe protectionist duties which the United States Congress with, probably, short-sighted wisdom has thought fit to impose. Enervated as it is by these protectionist duties, how can the American iron trade hope to contend successfully with us upon markets in which a fair field and no favour is the order of the day? Even hard times, then, bring some compensating advantages in their train.

COLLIERS' WAGES IN PRUSSIA.—Some curious information concerning the wages earned by the coalminers in the employment of the Prussian Government is given in an article in the *Frankfurter Zeitung* on the recent labour disturbances in Upper Silesia. From the circumstances that the miners complained to the local authorities a short time ago that the successive reductions of their wages had made it impossible for them to support their families, and that women took part in the excesses, it is inferred that the rioters had been reduced to starvation point. The miners, it is stated, showed their wage-books to the officer in charge of the troops sent to repress the disturbance, and it is significant that he caused relief to be distributed. A loan of from 10*s.* to 15*s.* each, repayable at the end of some months, has since been made to the miners in pursuance of orders from Berlin, with a promise that the wages shall be raised. The earnings at the time of the riot are given as equivalent to 1*s.* and in some instances less, per shift. According to official

reports, the wages paid in the Saarbrück pits were at the rate of about 2s. 6d. per shift in 1865, and about 3s. 8d. in 1873. A rather higher rate was paid in the private pits in Westphalia. In consequence of a circular from the Minister of Commerce a general reduction was initiated in 1875, which has been followed by successive reductions, the effect of which has been intensified by short time. As the rate paid in the Saarbrück pits last year (since when no reduction has been reported) was a fraction under 3s. per shift, it would appear that the miners in the Upper Silesian pits have been receiving only about one-third the wages paid in other Government collieries. Nevertheless, the balance sheets of the pits in question show that the net profits paid into the Treasury were upwards of 87,000l. in 1876, 75,000l. in 1877, and 70,000l. last year. During the last quarter an additional 12,000l. was made for the Treasury by further reductions of wages.

TECHNICAL AND PROFESSIONAL EDUCATION.

The desirability of raising technical knowledge to the level of professional knowledge in the opinion of the community generally, and thus of counteracting the growing tendency to regard the attainment of professional rank as the sole object worth striving for, has frequently been pointed out in the *Mining Journal*, and it is gratifying to observe that at the recent *conferencia* of King's College, Windsor, Nova Scotia, the President—Canon DART—directed prominent attention to the subject in his address, observing that the best educated man amongst a number of men under the same circumstances is he who has the power of doing the most effective work, and adopting the view of an American writer that the *mis-educated* classes are more dangerous to the community than the *uneducated* classes. He admitted that modern statesmen rightly argued that ignorant voters were likely to become the mere tools of unscrupulous and ambitious men, but urged that it is not so clear that education as commonly understood by politicians tends to diminish crime. There is, indeed, an affinity between departments of truth which appear to be most diverse in character, and there may be moral discipline imparted even in teaching arithmetic; but it is also true that the wits may be sharpened and knowledge imparted without touching the moral side of the pupil at all; and if the illiterate pick-pocket becomes metamorphosed into the skilful forger or embezzler it is hard to see the benefit of his education either to himself or the community.

But not to put an extreme case there must, as the Rev. Dr. DART says, be some defect in a system of education which leads a large number of those trained in it to dislike or condemn real labour, and which creates crowds of disappointed candidates for small literary posts and Government offices. The system of education complained of in America prevails likewise in all parts of the British empire, and it is unfortunately too true that a large number of teachers inculcate the sentiment that education should raise all who obtain it above the necessity of drudgery; that there are better ways of making a living than by manual labour, and that those higher ways will be open to those who "get an education." All this has resulted in a dainty, effeminate, and false view of the world as a place where only uneducated and inferior people need work hard or engage in toilsome or unattractive employments. Now, admitting the truth of all this, the great question is as to the best method of providing a remedy. And this remedy would appear to be the wider recognition of manual and mechanical dexterity, with which would be classed scientific knowledge, and the lessening of the homage paid to professional acquirements. By this means it would become practicable for every man to give his whole attention to subjects the knowledge of which would make him a useful member of the class to which he belongs, and at the same time a social rank as high as that of the comparatively useless professional classes, the members of which have now become so swollen in number that the majority of them are a misery to themselves and a nuisance to those about them.

The members of the so-called learned professions have, it is an indisputable fact, made less progress during many centuries than has been made by those engaged in any other occupation. In connection with the useful sciences every year records some progress, and most of the improvements or discoveries made tend to the extension of benefit to a large number of persons, but in the learned professions—*theology, law, and military affairs*—it is in the last alone that any real progress has been made for centuries. In *theology* most, if not all, the arguments which now create such ill-feeling amongst men were better urged in the fourth century, and immediately after the time of Luther, and the tone of the disputants was scarcely less venemous than that of the priestly order of the present day, whilst the progress, if any, in the legal profession has been in the direction of rendering enactments absurd and worthless by giving them interpretations which would scarcely be dreamed of except from an attempt to justify the infraction of them. Of late the universities have energetically endeavoured to alter this state of things by offering inducements to study natural science, and although it would be unfair to say that it is the movement of this kind at King's College, Nova Scotia, that has greatly increased its prosperity and popularity, it is certain that since natural science has received more attention there the value of the institution has been much more widely recognised by the community, and the energy and intelligence of the teaching staff has been far better compensated in the results produced.

COAL.—The production of coal in 1878 showed a decrease of 1,567,905 tons as compared with 1877. Durham and Northumberland suffered the greater portion of this decrease—1,337,811 tons.

THE DURHAM COAL TRADE ARBITRATION.—Lord Derby sat as umpire at the Surveyors' Institute, Westminster, on Thursday, in the dispute between the coalowners and colliers of Durham. Mr. David Dale and Mr. William Armstrong appeared as arbitrators for the masters; and Mr. Crawford and Mr. Lloyd Jones acted in the same capacity for the men. Mr. Lindsay Wood, President of the Durham Coal Trade Association, Mr. Henry Wood, and Mr. Benning put the case of the masters; and Messrs. Forman, Patterson, and Wilkinson gave evidence on behalf of the men. The representatives of the masters and the men having respectively read their replies, Lord Derby reserved his decision till Monday next.

GROWTH OF GOLD.—From a series of experiments made and recorded by Mr. GEORGE ATTWOOD, F.G.S., in connection with a gold nugget covered with a glazed ferruginous earth, that gentleman concludes that gold nuggets do gradually increase in size, owing to the accumulation of fresh particles of finely precipitated gold. The details of the experiments upon which these conclusions were based were given in a communication to the Chemical Society, from whose journal the paper has just been reprinted in pamphlet form.

THE BRITISH ASSOCIATION.—The forty-ninth annual meeting of the British Association for the Advancement of Science will begin on Aug. 20 at Sheffield. The sections are the following:—A. Mathematical and Physical Science: President, George Johnstone Stoney; M.A., F.R.S., M.R.I.A., Secretary to the Queen's University, Ireland. Vice-Presidents, Rev. Samuel Earnshaw, M.A., and Prof. Sir William Thomson, M.A., LL.D., D.C.L., F.R.S., L. and E.; secretaries, J. W. L. Glaisher, M.A., F.R.S., Sec. R.A.S., Oliver J. Lodge, D.Sc., and Donald MacAlister, B.A., B.Sc. (recorder).—B. Chemical Science: President, Prof. James Dewar, M.A., F.R.S., L. and E.; Vice-Presidents, J. H. Gilbert, Ph.D., F.R.S., F.C.S., F.L.S., and Prof. Roscoe, B.A., Ph.D., F.R.S., F.C.S.; secretaries, H. S. Bell, F.C.S., W. Chandler Roberts, F.R.S., F.C.S., F.G.S., J. M. Thomson, F.C.S. (recorder).—C. Geology: President, Prof. P. Martin Duncan, M.B., F.R.S., F.G.S.; Vice-Presidents, A. C. Ramsay, LL.D., F.R.S., V.P.G.S., Prof. W. C. Williamson, F.R.S.; secretaries, G. Blake Walker, F.G.S., W. Topley, F.G.S., A.I.C.E. (recorder).—D. Biology: President, Prof. St. George Mivart, F.R.S., F.L.S., F.Z.S.; Vice-Presidents, Prof. Gamgee, M.D., F.R.S., Prof. Lawson, M.A., F.L.S., Dr. P. S. Smith, E. B. Taylor, F.R.S.; secretaries, Arthur F. L. S., Prof. Rudler, F.G.S. (recorder), Prof. Schäfer, F.R.S. (recorder).—E. Geography: President, Clements R. Markham, C.B., F.R.S., F.L.S., Sec. R.G.S., F.S.A., Vice-Presidents, Sir Douglas Forsyth, K.C.S.I., C.B., F.R.G.S., Sir Rawson

W. Rawson, K.C.M.G., C.B., F.R.G.S.; secretaries, H. W. Bates, Assist. Sec. R.G.S., F.L.S., E. C. Kye, librarian, R.G.S., F.L.S. (recorder).—F. Economic Science and Statistics: President, G. Shaw Lefevre, M.P., Pres. S.S.; Vice-Presidents, Frederick Brittain, A. J. Mundella, M.P., F.S.S.; secretaries, Prof. Adamson, R. E. Leader, B.A., Constantine M. Iloy (recorder).—G. Mechanical Science: President, J. Robinson, Pres. Inst. Mech. Eng.; Vice-Presidents, Sir John Brown, Alderman Mark Firth, Prof. Osborne Reynolds, M.A., F.R.S.; secretaries, A. T. Atchison, M.A. (recorder), Emerson Bainbridge, H. Trueman Wood, B.A.

RUBY AND DUNDERBERG CONSOLIDATED MINING COMPANY.

How long the present state of financial suspense will last it is, of course, impossible to say. The public cannot continue to press their money upon bankers at a nominal interest remuneration. Past experience shows that such a state of things can only be temporary, and we think we may assume that whenever the time comes a larger return will be looked for, and a higher rate of interest sought. There is no larger field for safely attaining this end than in the United States of America, and there the public are likely to seek it. We, therefore, deem it of great importance to impress upon the public to notice the fact that they are by no means so helpless with respect to their investments in that country as for some time past it has been the fashion to declare. The rescue of the Erie Railway, the Alabama and Chattanooga Railway, and other similar undertakings, has shown that if investors only work together instead of exhausting their efforts in isolated movements, they can, by the ordinary process of law, get the best of any number of rascals who try to defraud them of their property. To-day we wish to point out a fresh instance of the result of what can be obtained by united endeavours on the part of shareholders if they work with patience and perseverance.

The above company which has just been registered, is the owner of a mining property in the State of Nevada, which has been held for years past by a gang of "evil doers," who had taken possession, and set at defiance the rightful owners over in this country. The history of this company is so instructive that we make no apology for dwelling upon the subject. In 1872 the Ruby Company was formed for the acquisition of some mining properties in the State of Nevada, including the famous Dunderberg lode and the surrounding locations; in fact, admittedly the most valuable mines in that district. The company came out under the most favourable auspices, and abundant capital was provided to erect furnaces and commence operations.

But within about 12 months from its formation a large body of ore was struck in the Dunderberg Mine; the past difficulties then arose, and one of their agents in America associated himself with the conspirators, and the property was taken possession of by these people. Large profits have been derived for a considerable period; in fact, until the mines were stopped by the energetic proceedings of the directors, who enjoying the sole confidence of their shareholders succeeded in raising the necessary money for fighting the company's battles in America and Europe simultaneously. After years of hard struggle, during which they have encountered the most obstinate resistance on the part of the usurpers, the directors have now the gratification of witnessing the complete release of all their mines, furnaces, works, and machinery. The value of the mines can best be pointed out by reference to a map of Lander county, Nevada. It will there be found that the Dunderberg Mines and adjacent locations occupy the heart of a mountain of which the prosperous Richmond and Eureka Mines are only outcrops. The Chairman who has so energetically worked in the interests of the company is now at the mines, and, together with Mr. Longmaid, a most experienced mining engineer, has begun active operations.

There is no reason whatever to doubt that this property will be as valuable or more so than the Richmond and Eureka Mines, both of which have given such enormous results to their fortunate shareholders. Nothing shows better the utter discouragement of the British public than to see shares of the Ruby and Dunderberg Company at about 2l. for every 10l. share, while the Richmond, which has been worked seven years, commands the price of 8l. for each of its 5l. shares; at this rate each Ruby 10l. share should be worth 16l. To say nothing for one moment depreciatory of the Richmond Mine one must, nevertheless, not overlook the fact that when ore has been taken out of a mine and sold the same cannot be replaced, and there is, therefore, no doubt that a property like the Ruby offers infinitely better chance than one which has been worked for so many years. The company having been reconstructed and re-registered under the above name a supplementary working capital of 10,000l. has been arranged for, and, as our advertising columns show to-day, this supplementary capital in the form of an issue of debenture bonds is offered by the contractors to the attention of investors. After what we have said the public must be left to form their own opinion, but we believe it would be difficult to find amongst the entire range of investments a 10 per cent. debenture which offers anything like the present security—a security which not only covers the value of the mines but also the furnaces and all the appliances of the company. The special feature is that every subscriber receives as a bonus the same amount of share capital which he invests in these bonds, so that if the company's shares go to a high price, which they are pretty certain to do, each investor makes a corresponding profit, besides deriving 10 per cent. from his bonds.

REPORT FROM CORNWALL.

July 24.—Again we have to report that mining matters remain *status quo*, and with but slight fluctuation. It is impossible to attempt any more definite forecast, and we can only congratulate ourselves that there is no reason to consider that our prospects exhibit any falling off. Fluctuations there of course always are and always will be in mining matters, but of late we have had even less than our usual share of them. Individual mines continue to look well. The reduction on the loss at the stamps in dressing at East Pool from 8½ per cent. to 3½ per cent. shows what can be done in this direction, and may be carried still further. This is one of the directions in which tin mining may look fairly for improvement. Various other mines to which we have before referred in this connection continue to open up well, and it is hoped that Wheal Prussia, which was sold by auction to Mr. Edward Parson, of Scorrier, has a good future before it. It has been well pointed out with mining materials and engines so cheap, and with labour so plentiful at a low rate of wages, a more advantageous time than the present for opening up and laying out a mine it is difficult to imagine and useless to expect.

The annual meeting of the Devonshire Association has been held this year at Ilfracombe. There were several geological papers, but only one which related to mining in any way, one in which Mr. T. M. Hall, F.G.S., enunciated the metallic minerals of the Ilfracombe and Combmartin districts as consisting of silver-lead, copper, and iron, with antimony, zinc, manganese, nickel, amber, and ochre.

We again return, and for the last time, to the valuable and suggestive report of Dr. Foster, Her Majesty's Inspector of Mines for the western district. Dr. Foster regrets that he had to institute no less than 23 prosecutions in 1878, each case often including several breaches of the Act, but he adds, "So long as I meet with such negligence and stupidity as prevailed last year I shall be obliged to go on constantly asking permission to take legal proceedings." Six of the prosecutions (resulting in five convictions) were for neglect in sending in the annual returns; seven prosecutions were for neglect to fence shafts in mines that were apparently abandoned or discontinued, in which there were five convictions; ten prosecutions related to mines in work, and resulted in nine convictions. Concerning the state of the ventilation which was the cause of prosecution "at the clay mines, owned by Messrs. Watts and Co., Messrs. Browne and Co., and Messrs. Whiteway and Co., as well as at West Roskear," Dr. Foster says, "It was simply disgraceful. I found that in various places in each of these mines a candle went out entirely when standing upright, and could only be kept alight by being held in a horizontal position." Such a state of things as this, of course, could not be passed over.

Again, the Inspector has to report that a very large proportion of his time is taken up by visiting unfenced shafts at abandoned mines. He naturally enough remarks, "It is very disheartening, after six years hard work, to find that the task is not nearly accomplished," but then it is quite true, as he also says, that he has "to deal with the accumulated neglect of centuries." Moreover, there is reason to fear "that there will always be much work of this kind for the Inspector of Mines in Cornwall," from the unfortunate fact that under the Act wooden fences are held to be sufficient, which in the nature of things cannot last for many years, and are likely to be pulled down for firewood. Dr. Foster believes "the only way to stop the practice of putting up fences of this kind will be to prosecute vigorously any lords or lessees of mines whenever I find their shafts in a dangerous state from the removal of parts of wooden fences." The hedge of dry stone is a better protection, but not entirely satisfactory, as the boys delight in tipping the stones over to hear them fall down the shaft. Against the timber "sollar" fence, a "mere trap, sure to give way unexpectedly sooner or later," Dr. Foster has always set his face, insisting that shafts so treated shall be fenced around as well. A granite "sollar" will do for a small shaft if properly put in; but a strong stone arch across the shaft is better. In both cases, however, there is danger of the work being imperfectly carried out, as it is hidden. "Where arching or sollaring with granite has been resorted to a stone post should be erected to show the exact position of the shaft." When the tops of the shafts have been secured by layers of stonework Dr. Foster has frequently allowed them to be fenced by covering them with very large granite posts, too large to be removed without great difficulty. Hundreds of shafts, it seems, have been filled up entirely, but as this is inadvisable when they may be required again in years to come "a very efficient way of securing a shaft for future use, and of preventing danger to the public, is to put in an arch at the adit level and surround the top by a good wall, properly built with stone and mortar, not less than 6 feet high." Dr. Foster considers that during the past year fully one-third of his time was taken up by attending to unfenced shafts, the mere cost of a journey to a mine being sometimes more than the expense of fencing two or three shafts. "Such a state of things is absurd, and I am determined, with your permission, to put a stop to it as far as lies in my power by a more rigorous system of prosecutions than I have hitherto resorted to."

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

July 24.—The demand which is being experienced by the colliery owners is hardly a third of what masters would like, so far as regards furnace and forge coal. A satisfactory feature in the midst of the present depression is that one or two of the railway companies are again obtaining their supplies from this district, which for some time past has been undersold by other mining centres in respect of this particular trade. But the prices are stated to leave little or no margin for profit, much of the steam coal being sold for 6s. and less per ton. The sale of pig-iron is this week a little more vigorous than last and makers are securing their prices with fair regularity. The finished iron makers are executing a few more orders, and a contract for ship-plates for the Mexican Government has recently been placed in South Staffordshire. The sheet-iron makers are not active. Sheets (single) may be quoted at from 6l. 17s. 6d. to 8l.; double, 7l. 10s. to 7l. 15s.; and latens, 9l. to 10l. 10s. and upwards.

The Cannock Chase Coalowners' Association are attempting to bring about a reform in the matter of the various weights which the boats they are in the habit of loading carry. They have, therefore, determined not to load coal into any boats the owners of which have not furnished a copy of the register. Coal dealers all over South Staffordshire are assuming a very indignant air at this treatment, and at a meeting in Birmingham they have determined that the request of the owners shall not be complied with.

The conference of ironworkers upon the wages question, which a fortnight ago I reported was coming off, has been held this week at Wednesbury. Resolutions were passed stating that the time had scarcely yet arrived when a claim for an advance in wages should be made, and that the ironworkers of South Staffordshire, Worcestershire, and Shropshire should form a new association upon principles to be laid down by a representative sub-committee.

The Coal and Iron Trades of North Staffordshire do not manifest much alteration upon last report. A movement of much importance has been inaugurated by Messrs. Stanier and Co., of Silverdale, who have given notice to their colliers for an increase in their working hours to eight a week. The men are not believed to be in a position to offer any great resistance.

IMPROVED STEAM-ENGINE.—A number of gentlemen, representing various interests in Kidderminster, accepted an invitation to witness the starting of a new engine of great motive power, at Messrs. J. Brinton and Company's Carpet Works. When it is mentioned that the new engine will work 250 Brussels and tapestry carpet looms, and drive spinning and accessory machinery, finding employment in the aggregate for 1200 workpeople, some general idea of its effectiveness will be gained. It displaces three other engines of 570-horse power. The stroke is a 5-ft. one, the fly-wheel making 70 revolutions per minute, thus giving a piston speed of 700 ft. a minute. The fly-wheel is 16 ft. 6 in. in diameter, by 9 ft. 3 in. across, and the power is transmitted from it to the main driving shafts by two double belts 34 in. each wide, and a third 30 in. wide. The air-pump is a patent of Messrs. Pollitt and Wiggell's of an ingenious kind, and one of Berryman's interheaters has been put in by Messrs. Joseph Wright and Company (Limited), Tipton. One of Cameron's double cylinder high-speed fire pumps has also been provided, which will be used for feeding boilers, supplying tanks, and also be available in case of fire. Mrs. Brinton started the engine, which she named the "Hercules."

SALE OF MINING SHARES.—Messrs. Farrington and Son offered for sale by auction, at their rooms, the Bridge, Walsall, 20 shares in the Cannock and Rugeley Colliery Company (Limited). The first lot of five of 100l. each, with 80l. paid, was started at 80l., and run up to 141l. each, at which price they were knocked down. Two other similar lots were sold at the same rate, and the remaining two lots were withdrawn.

THE PREVENTION OF OVERWINDING AT COLLIERIES.—On Monday two interesting experiments with Leonard's safety apparatus to prevent the overwinding of colliers or loss of life by rope breaking were made at Lord Dudley's No. 30 Pit, Saltwells Colliery, near Dudley. The experiments were witnessed by Mr. John Skidmore (Lord Dudley's agent), several other gentlemen, and a number of colliers from the neighbourhood. The apparatus has been previously described, but since that time a great improvement in the fixing has been effected. The principle on which the safety apparatus acts is that in the case of overwinding a stout collar, holding together the arrangement, is forced away, loosening a simple chain, and so releasing a pair of coil springs, which forces the eccentric heads against the guide ropes, and holds them in a vice-like grip. In the case of a rope breaking the same thing happens wherever the cage may be. Formerly the apparatus ran beneath the cage, and whilst it acted well, the machinery was likely to be damaged by coming into contact with the sump. Now the apparatus is fixed below the head of the cage, and above the men, where it is safe from bumps and from rain, snow, and sleet. On Monday the cage was elevated midway between the pulley-wheel and the pit mouth, and the collar knocked off with a sledge-hammer. The moment the collar fell the chains gave way, the springs expanded, and the eccentrics gave so firm a grip that the cage did not fall an inch. After matters were put straight, which did not take ten minutes, the rope was pulled over the wheel, and the cage again remained stationary. Both experiments were eminently satisfactory, and proved that not a pennyworth of damage need result from an overwinding; and, better still, that the lives of the men in such a case were absolutely safe. Mr. Leonard's place of business is in Birmingham, and Messrs. Thomas Johnson and Co., Dudley, are the agents.

The South Staffordshire Mill and Forge Managers' Association, of which Mr. Richard Edwards, of Tipton, is secretary, will hold a

meeting at the Swan Hotel, Dudley, on Saturday, when Mr. Jonathan Edwards, of the Princes End Foundry, will exhibit a model of his improved puddlers' door frame, and Mr. John Lester—who went over to America some years ago in company with Messrs. G. J. Soelus and J. Jones, on behalf of the Iron and Steel Institute, to examine the working of the Danks' revolving-puddling furnace—will read a paper on Iron and Steel Manufacture. Recently the Managers' Association have had before them the subject of using salt in the puddling process. It behoves the iron trade, in these days, when steel is driving iron out of the market, to study every means of economising, so that they may die the harder. It was submitted to the Managers that sulphur and phosphorus, which are so inimical to a high quality of iron, can be removed by the use of salt; and, further, the time for puddling each heat is so much shortened that an extra charge per day can be worked. Less fuel was used, and the yield was increased one-third. If such is found to be generally the case, and not the experience of two or three works only, the adoption of the invention ought not to be delayed. It is, however, acknowledged that the use of salt is not suitable for all description of iron.

—Wolverhampton Chronicle.

TRADE OF THE TYNE AND WEAR.

July 23.—The coal and coke trades continue firm, and shipments large. In Northumberland all the first-class collieries are about fully employed, and the prospect is fair for the present. The shipments of coal and coke at Tyne Dock have been fully up to the average, and the shipments at other places on the Tyne and Wear have also been good. Cargoes of coal are sometimes sent out to America from these ports, but as only 4s. per ton freight can be got, many vessels are sent out in ballast, and of course the freight from America has to pay all the costs. The American consul at Newcastle has interested himself much in this trade, and has published statistics of the most valuable kind; it is clearly shown by those accounts that if the import duty on coal and iron into the States were abolished or reduced the traffic would be largely increased—an immense impetus would be given to the trade, which can only be a matter of conjecture as to its extent. The duty on coal entering the States is 75 cents per ton, and Mr. Jones, the consul, refused to show that this simply benefits the American colliery owners at the expense of the American farmer. There is a party in the States who are inclined to adopt the principle of Free Trade, and this party is daily growing. Already some of the most eminent politicians there have accepted the principle, and the Legislature of the United States may ere long discover that Protectionist theories are opposed to the true interests of that great people. The chemical market is firm, and prices are a shade better. Shipments of these goods continue large to the Continent, and also to America.

The question of shipping coals at Blyth is again occupying much attention amongst colliery owners and others in that locality. What is required is greater depth of water to enable large vessels to be loaded afloat, and also railway facilities to enable the produce of the collieries to reach the port by a shorter route. It is probable that some action will be taken shortly to effect these objects. The extensive railway works at Sunderland are rapidly nearing completion. They consist in a large railway bridge over the Wear and a new central station. Formerly there were three stations, but in a short time they will all be united, and thus afford the inhabitants and visitors much greater facilities.

On Monday the Inspector of Coal for Government purposes visited Cambois Colliery, and inspected the seams of coal in that mine, the result of which was, we understand, highly satisfactory. The Inspector was accompanied by Mr. G. B. Forster, Mr. Fothergill, and several other gentlemen.

There was a better attendance on 'Change at Middlesborough on Tuesday. Prices were the same as those of last week, being based on No. 3 Cleveland pig, selling at 32s. 6d. per ton. Messrs. Connal and Co., the warrant storekeepers at Middlesborough, have now a stock of 80,000 tons, about 300 tons having been added since last Tuesday. Makers expect that prices will improve, as the demand and supply are being more nearly equalised. One or two firms who can afford to blow out their furnaces and wait till higher rates can be obtained are going to suspend operations. Some of the weaker firms will be benefited by this, as the total production will be diminished. Reports from other iron centres are more cheering, and it is hoped that in a very little time Cleveland will receive a larger share of returning trade. There is nothing new in the finished iron trade. Ironfounders are busy, and there is still a good deal of ship-building and engineering going on.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

July 24.—Some interesting returns have been furnished, having been moved for by Mr. Vivian, M.P., as to the average prices of coal exported during 1878. The local prices show that at Cardiff the price was 9s. 9½d. per ton; Swansea, 8s. 5½d.; Bristol, 12s. 4d.; and Gloucester, 16s. 9½d. per ton. Of course, from the latter place very little is sent. In the prices at which coal was declared on its export to various countries great differences exist.

There is a rumour prevailing in the district that no further investigation will be made re the Dinas explosion, unless the Home Office counsel recommends it.

The members and friends of the Cardiff Naturalists' Society, numbering about 80, have paid a visit to the Tharsis Copper Works, East Moors, Cardiff. They were courteously received by the manager, Mr. George Gathrell, and witnessed the process of copper making. It was stated that the company produced at these works about 2000 tons of copper per year; and, with the output of their other works, make about 10,000 tons a year. A cordial vote of thanks was passed to Mr. Gathrell for his kindness, and he accepted an invitation to read a paper before the society in the winter session.

A movement is on foot among the men to establish a new Miners' Union for the district. One or two meetings have been held, with the idea of its promotion, but many of the men hold back, having a lively knowledge of what have been the results of such combinations.

There are not wanting, taking the entirety of the works, signs of a slight improvement in the iron and steel trade. Only a day or so ago it was feared that Blaenavon Works were to be entirely stopped. Now it is satisfactory to note that nothing of the sort will be done, at any rate for the present. The creditors met in London yesterday, when the liquidators reported as to the working since the suspension of the company. No loss had occurred since that time, and consequently for the present this large concern is to be kept going. Then, again, another furnace has been lighted at Sirhowy; and arrangements are in progress by which the molten metal will be run to the Ebbw Vale Steelworks. At Rhymney an improvement, though it is feared not a permanent one, exists. A number of mill-furnaces have been re-started, as well as three out of the five forges. There is a fairly good demand for Bessemer steel rails, and there are said to be more orders in hand at some of the works. At the Llanore Works there is rather more doing. Clearances of iron have not increased during the past few days; the principal have been to Constad and La Rochelle, to the former 1600 tons being sent. The demand for railway iron, as per usual, is very dull; but the make of bar iron is fairly large.

The local tin-plate manufacturers' association, or rather its executive committee, has met at Swansea, when the question of reducing wages was considered. It was agreed to adjourn the consideration of the matter. The tin-plate trade is moderately active, but prices are somewhat easier.

The Coal Trade remains in a rather unsatisfactory state. Clearances on foreign account have been moderately well kept up, but, as a rule, shipments have fallen off. The demand for steam coal has been fairly good, and yet complaints are heard as to a scarcity of orders. House qualities are decidedly dull, and there is no change to be noted in prices. The patent fuel department is quiet. There are very few pits now at which any of the men are on strike. They have resolved to go in at New Tredegar, with the exception of those employed at one pit. At several house coal pits in the Rhondda Valley the same decision has been come to. At the Cwm-

dare Colliery, belonging to the Ocean Colliery Company, the men have been promised that if new contracts can be obtained the pit will be re-started.

An important improvement in the puddling process has been invented by Mr. Henry Parton, of Messrs. Gilbertson and Co.'s tin-plate works in the Swansea Valley, but as the patent is not yet completed it would be unfair to publish the details beyond stating that the arrangement is extremely simple, and that by merely using a jet of steam entering the puddling furnace near the bridge he renders the use of fettling almost unnecessary, and the casting will last ten years or more, besides keeping the bottom cool and in good order. It has the advantage of saving the workman's labour and master's money. The trial at Messrs. Gilbertson's is said to have been very successful.

THE THARSIS COPPER WORKS.—The Cardiff Naturalists' Society have, on suggestion of the President, Mr. Heywood, taken a step in the right direction. They on Friday visited the Tharsis Copper Works, Cardiff, where they saw elaborate chemical processes, and the results in actual work probably worth more in a practical and scientific sense than attendance at half a dozen lectures. The members were conducted over the works, under the guidance of the manager, Mr. Gathrell, who acted as cicerone. At these works the copper is extracted by what is known as the wet process, applicable to ores containing small quantities of copper—say, about 3 per cent. The visitors saw the native pyrites, as delivered here from the Tharsis Company's works in Spain. They consist chiefly of sulphide of iron, with a percentage of copper. This crude ore is sold to the sulphuric acid makers, who return it to the copper works after roasting off the sulphuric acid. This calcined ore is mixed in a quantity of common salt, in sufficient proportion to convert the copper into chloride, but not sufficient to convert the iron into chloride. This mixture is stored in a large shed erected for the purpose, and is afterwards crushed between two rollers in the crushing mill, and then raised by hydraulic power to the level of the calcining furnaces. In these furnaces the flame does not come into contact with the ore, the fire pouring over the arch forming the roof and under the bed forming the hearth. The fumes produced by the waste process are conducted through flues to the condensers, and the hydrochloride, sulphuric, arsenious acid vapours are there separated. These condensers, it may be stated, are high upright shafts, filled with coke and lined sandstone, which has been boiled for six weeks in tar. The water percolates through the coke and dissolves the acid. The ore being calcined, and the copper in that ore thereby converted into soluble chloride, by the action of the salt is dissolved out by water, the weaker solutions of copper extract being first passed over the freshly calcined ore; and then the liquor is run into the precipitating tanks. This seemed greatly to interest the naturalists who witnessed the operation of bringing out again the solid copper from the solutions, by means of strips of iron, which decomposing the copper and salt, causes the metal to be deposited. The precipitated copper is easily removed; by shaking the strip a film of the copper falls to the bottom. This copper contains about 80 per cent. of metallic copper, and is charged into reverberatory furnaces and melted. The slag is afterwards skimmed off, and the copper tipped into sand pig moulds in crude metal. This metal is re-melted and refined in smaller furnaces, producing blister copper, and afterwards refined metal. The slag skimmed off during each refining process contains from 3 to 10 per cent. of copper. This is washed over and over again until it contains no more than ½ per cent. of copper. When finished the material is made into ingots. When the company had concluded the inspection, Mr. Heywood proposed a vote of thanks to Mr. Gathrell, which was heartily agreed to.—The President said that it had been suggested that Mr. Gathrell should be asked to read a paper at the winter session on the subject.—Mr. F. G. Evans seconded the motion, and said that they had seen what chemistry could do in connection with the manufactures. We should use our coal in metallurgical operations to a much greater extent; instead of sending out pigs and slabs, we should send out the copper and iron in a finished state.—Mr. Gathrell said it had given him great pleasure to see the members of the Cardiff Naturalists' Society, and if any one desired to see more details of the processes he would be very happy to afford every opportunity. Had he time, and opportunity served, he should be happy to prepare and read the paper spoken of. The Tharsis Company, one of the largest copper manufacturers in the kingdom, have works near Birmingham, on the Tyne, in Glasgow, and at Widnes, near Liverpool. The annual product at the Cardiff Works is 2000 tons of copper and 24,000 tons of iron ore.—*South Wales Daily News.*

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

July 24.—The town of Wrexham is becoming a favourite resort of sanitary engineers. A number of these gentlemen, with others belonging to the medical profession, assembled in the town last Saturday to witness the working of Mr. Shone's sewage pump, the construction of which I described a few weeks back, as well as to look at the sewage farm of the town. A resolution was passed approving of the pump. Singularly enough, at neither of the recent meetings has any statement or explanation of relative cost been made as compared with the work done by other pumping arrangements. The stream known as the Pickhill brook, which receives the effluent water of the Wrexham sewage farm, flows into the River Dee above the town of Holt, and from this point down to Chester the surface of the water was one day last week covered with thousands of dead fish floating down with the stream. In the upper part of its course this brook receives the water of the Minera Lead Mines, and flows past the waste heaps of the Minera Limestone Works. It is supposed that the poisoning came from these two sources—principally, perhaps, from the lime works—but the Chester people, who derive their drinking water from the river a short distance above their town, propose to enquire more particularly into the cause of the disaster.

Speaking of the River Dee, an important meeting of persons interested in its navigation from Chester to the sea has lately been held at Connaught's Quay. It appears that through some breaches and imperfections in the embankments the channel is silting up. Formerly a tide of 13 ft. was sufficient to float vessels up to Connaught's Quay, which now require 17 ft. of water, and it was agreed that unless something were done Connaught's Quay would soon cease to be a port. It was felt that if the gaps in the embankment could be repaired, and the channel confined to the Welsh side of the river, the evils complained of would be remedied. A resolution was passed that a memorial be presented to the Commissioners and to the River Dee committee of the Chester Corporation, asking them to receive a deputation of shipowners, captains, traders, and others, with the view of bringing before their notice the serious state of the river. Considering a number of foundries, collieries, smelting, chemical, and other works there are along the estuary, the subject is one of pressing importance.

The scheme for the utilisation of the sludge of the Oswestry sewage is fairly under way. The solid matter is first allowed to subside in the receiving tanks. These are emptied of the sediment once a week, the fine mud being thrown upon a hard sloping floor, in order for as much moisture to run off as possible. After a time the mud is placed in a drying oven heated by steam. It is then placed in the uppermost of four drying machines, which have been patented by the inventor, Mr. Kidd, of Wrexham, who is also manager of the works. These consist of a hollow double screw cylinder, which is made to revolve slowly in an enclosure heated by the waste heat of the boiler furnaces. The drying matter falls from the uppermost cylinder to the next, and so on downwards, until it emerges in the shape of a powder dry enough for mixing, the ammonia contained in it at the first having been retained and fixed by the sulphurous gases generated by the fire. In this state the dried sludge may be used as a cheap useful manure, or it may, as it is proposed to do, be mixed with soluble sulphates of high strength, and possibly with more ammonia, and thus be converted into a first-class manure. Already a good quantity of the last description has been sent out, and another year will prove its value, which if satisfactory, as I should think it will be, will provide one good way of utilising the solid matter of the sewage of towns. The drying cylinders have a capacity for drying 40 tons of solid matter weekly, and the process seems very effectual and economical.

It appeared to me on a visit paid to Oswestry recently that there were some radical defects in the receiving tanks; first, they were too deep; secondly, there was no provision for making the outflow less rapid than the inflow, consequently a large proportion of impurities float off with the effluent water; and, thirdly, they were too few. At least two more tanks of larger area and less depth should be constructed at a lower level before the outflow can be brought to any approximate degree of purity. As it is, it seemed to me a marvel that the farmers whose land lies along the course of the outflowing stream had not done more in the way of irrigation.

A workman was killed the other day at the Talyarn Slate Quarry, Nantlle, by the breaking of a chain, causing a wagon to fall upon him. Those who have seen the appliances used for winding slate blocks from the sunken quarries of that district will agree with me that it is time the old cumbersome method of winding employed should be replaced by something more modern and safe.

By the death of Mr. J. Provis, of Liverpool-road, Chester, the last of the band of engineers who were associated with Telford in the construction of the Shropshire Union Canal, the Great Holyhead-road, and the Menai and Conway Suspension Bridges, has passed

away. I would like here to place on record the name of another most useful but less recognised coadjutor in the construction of those bridges, the late Mr. John Davies, smith, of Ellesmere. It was Mr. Davies who made a preliminary wire model of the Menai Bridge, and it was to his practical knowledge that the engineers were indebted in ascertaining the strength of the materials required. The model bridge was originally fixed over the canal at Ellesmere, and for many years it has been hanging along the inside of a shed belonging to the Canal Company in that town. Is it not worthy of a place beside the first steam engines and other pioneers in works of modern improvements?

Let me give a brief answer to the plain question which Mr. Knapp has at last been able to put. If he will refer to his own letter on the Llanrwst District, in the Journal of June 21, he will find in the first eight lines the explanation he seeks. I ought, perhaps, to have used the word "mainly" in my reference to the remarks made in the Journal of late concerning the utilisation of wind-power; but, as I did not thus qualify my remarks, Mr. Knapp is entitled to the benefit of his quibble, and he is welcome to it. I suppose there cannot be any objection to using wind-power as a primary power where there is sufficient wind for the purpose, as Mr. John Roberts assures us there is in the Llanrwst district.

The new line of railway from Bettws-y-Coed to Festiniog, connecting the London and North-Western system with the great slate-producing district of Merionethshire, was opened for passenger traffic yesterday morning. Its length is about 11 miles, and it has cost upwards of 500,000*l.*, half that amount being expended on a tunnel two miles long.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

July 24.—Trade in Derbyshire has undergone no change during the week, and, as a rule, is quiet, and as regards mining in particular most unsatisfactory. In Chesterfield, the festivities in connection with the opening of the Stephenson Memorial Hall have been continued up to the present time, and the event in every way has been a great success. As the Duke of Devonshire has once more visited his splendid mansion at Chatsworth, it was expected that during the present week a deputation of the lead mine owners holding under his Grace would wait upon him for the purpose of obtaining a reduction of royalties now in force. This need scarcely be stated is a necessity in the existing state of things in connection with lead mining, for the losses have been much greater than the gains to those engaged in it. As yet we are unable to state whether his Grace has received the deputation or not, but next week, in all probability, shall be able to give more particulars. Not much is now being done at many of the lead mines, there being only a few that can be said to be paying. At the collieries business is still but moderate, the demand for house coal having fallen off, more especially in the London market, whilst prices have now reached a point which leaves scarcely a fragment of profit to the owners, and in some instances it is said causes an actual loss. Steam coal is not by any means in such active request as is usual at this time of the year, and the great railway companies are now able to purchase at rates much lower than for several years past. At the ironworks business is not at all active, although pig has recently gone off rather better. Bessemer rails appear to be in good demand, and at Dronfield large quantities are now being turned out.

In Sheffield the present month has been about the best of any of the year so far, and some branches have become busy that have had a long season of quietness. Armour-plates for our own Government are being extensively produced, whilst a steady business is also being done in light ones for ships and boilers. Steel, however, is fast replacing iron for many purposes, and some firms have good orders in hand for plates of that material for vessels of war, as well as for boilers. Ordinary tyres, axles, and wheels are also in better request, both on home and foreign account. Makers of Bessemer rails are still working very well, although it is said that the prices at which contracts have to be taken are far below what they were at the close of 1878, but there is no doubt but what a margin of profit is left, for hematite pig can be purchased at a rather lower figure than it could last year. Of the direct process of making steel from ordinary ores no steps appear as yet to have been taken for carrying it out in the Sheffield district, although one would have thought that advantage would be taken of it as soon as possible after the satisfactory tests that have been made. The season has been a rather quiet one for agricultural implements and lawn mowers, and just now quietness rules in those branches. General cutlery is scarcely so good as it was, and some of the leading houses, where the best qualities of table and other knives are produced, are less busy than they were a month or two since. Makers of sheep shears and cane and other cutters have had a fair season, and the exports have been so far satisfactory.

The Coal Trade of South Yorkshire is still in an unsettled state, upwards of 1200 men being entirely idle, whilst short time rules at most of the collieries. The business doing is the reverse of remunerative, and the bulk of colliery owners state that they are losing money by what they are doing. This, of course, cannot last long, so that the men will either have to submit to a reduction or many collieries will be closed for a time. The Miners' Association will do all which is possible to prevent the latter, for at the present time a part of the members' subscriptions is devoted to the support of the men who have nothing to do, whilst subscriptions for the same purpose are solicited from the public.

The proposed line of railway from Hull to Barnsley is receiving every support from the colliery owners in South Yorkshire, who would be greatly benefited by it. It would aid materially in making the Barnsley steam coal much better known on the Thames than what it now is, and this would be more particularly the case were Mr. Thompson's scheme of sea carriage adopted. As yet the latter has not been so fully developed as to be taken up by our colliery owners, but as to its feasibility there appears to be no doubt whatever.

Mr. George Minto, formerly manager of the Oaks Colliery, died a few days ago at Barnsley, and on Wednesday his remains were interred at Ardsley, the parish in which the colliery is situated. He was a quiet and unpretentious man, much respected both inside and outside the profession to which he belonged, and was one of the first members of the Midland Institute of Mining Engineers.

IRON AND STEEL INSTITUTE.—The first volume for 1879 of the Journal of the Iron and Steel Institute has just been issued, and contains the detailed report of the meeting in May, of which a full abstract was published in the *Mining Journal*. The President's address and the various papers read at the meeting are given in *extenso*, together with the discussion to which they gave rise. The volume includes Mr. Daniel Adamson's second paper on the mechanical properties of iron and mild steel; Mr. H. N. Maynard's paper on the use of steel in the construction of bridges; and Mr. N. Barnaby's paper on the use of steel in naval construction. For the purposes of discussion the three papers were taken as one, and the amount of valuable information which they brought out was not less valuable than the papers themselves. Next follow the paper on the elimination of phosphorus by Messrs. S. G. Thomas and P. G. Gilchrist; Mr. G. J. Snellus's paper on the removal of phosphorus and sulphur during the Bessemer and Siemens-Martin processes of steel manufacture; Mr. E. Riley's paper on a ready means of moulding lime, and making lime or basic bricks and linings for furnaces, converters, &c.; and the translation of Mr. Harmet's (of De-nain) letter on dephosphorisation in the Bessemer converter by the method of rephosphorising. These papers were likewise discussed simultaneously, and much useful information was elicited. Mr. John Pattinson's paper on a new volumetric method of determining manganese in manganiferous iron ores, spiegel-eisen, steel, &c., and the discussion upon it are also given. There are appendices giving the financial statement of the Association, and tables referred to in the papers; as well as a vast number of industrial and technical notes by the general secretary, which will be of great value to the trade. The volume fills 330 pages, and is illustrated with numerous plates. The autumn meeting will be held at Liverpool on Sept. 24 and following days.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867, AND IN THE MATTER OF THE PENSTRUTHAL CONSOLS TIN AND COPPER MINING COMPANY (LIMITED).

ALL CREDITORS of the ABOVE-NAMED COMPANY are required to send their NAMES and ADDRESSES, and the PARTICULARS of their DEBTS or CLAIMS, and the name and address of their Solicitor (if any), to Mr. EDWARD ASHMEAD, No. 62, Cornhill, London, Accountant, on or before the 9th of August, 1879, after which day the under-named Liquidators of the company will distribute its ASSETS, taking regard only to the claims of which they shall then have had notice; and any person neglecting to make claims by that day will be EXCLUDED from the BENEFIT of such DISTRIBUTION.

JAMES LABY,
JAMES WALTON,
HARTLEY WADDINGTON,Liquidators.
JOHN JOHNSON WINNER, 70, Chancery-lane, London, Solicitor.

Dated this 23rd day of July, 1879.

THE UNDERSIGNED are prepared to RECEIVE TENDERS for the SUPPLY, ON HIRE, of ONE HUNDRED 10 ton COAL WAGONS and ONE HUNDRED 5 ton COAL WAGONS, suitable for traffic on the Great Western, Taft Vale, or Rhymney Railways.

HARRIS NAVIGATION COAL COMPANY (LIMITED),
5, Dock Chambers, Cardiff.

BONA FIDE AND SAFE INVESTMENTS.

ROCHE FELSPAR COMPANY (LIMITED), AND BELL TIN AND COPPER MINE (LIMITED).

These SHARES cannot fail to TAKE A PROMINENT POSITION in the MARKET shortly, and a great advance in price. See Mining Journal of the 7th for the report of the recent discovery of feldspar, and this day's Journal for the analysis of the spar.

For full particulars and prospectus, apply to T. R. PARKYN, Jun., Finsbury House, Roche.

HORIZONTAL ENGINE, 15-horse power, strong, and well-finished, with fly-wheel, wrought crank shaft 5 in. diameter, and massive box bed; suitable for winding or general purposes; quite new. Price £70.

HORIZONTAL ENGINE, 8 in. cylinder, beautiful and most improved design, new and complete, with pump and governor. £35.

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MR. WILLIAM BREDEMEYER, MINING, CONSULTING AND CIVIL ENGINEER, U.S. MINERAL SURVEYOR FOR UTAH AND IDAHO. NOTARY PUBLIC.

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REFERENCES:

Wm. Lane Boker, Esq., U.S. Consul, S. F.; the Honorable Leland Stanford, Ex-Governor of California and President of the Central Pacific Railroad, S. F.; the Right Rev. Wm. Ingraham Kip, D.D., LL.D., Bishop of California; the Rev. William Vaux, Senior Chaplain U.S.A., Santa Cruz, Cal.; the Anglo-Californian Bank, San Francisco, California; the Anglo-Californian Bank, No. 3, Angel court, Throgmorton-street, London, E.C.

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HOPKINSON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measure ment, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.

The following few testimonials, out of hundreds in Mr. Hopkin's possession, speak to the value of the work:

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"Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—Colliery Guardian.

London: MINING JOURNAL Office, 26, Fleet-street, E.C., and to be had of all booksellers.

COPPER ORES.

Sampled July 9, and sold at Swansea, July 22.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Betta Cove...	100	8 1/2	£24 9 0	Union	78	5 1/4	£23 13 0
ditto...	100	8 1/2	£24 9 0	ditto	45	2 1/2	£11 15 0
ditto...	100	8 1/2	£24 9 0	Virneberg	65	1 1/4	£8 3 0
ditto...	100	8 1/2	£24 9 0	ditto	64	1 1/4	£8 3 0
ditto...	90	8 1/2	£24 9 0	ditto	24	2 1/2	£11 5 0
ditto...	90	8 1/2	£24 9 0	ditto	10	2 1/2	£10 13 0
ditto...	90	8 1/2	£24 9 0	ditto	27	9 1/2	£4 16 0
ditto...	90	8 1/2	£24 9 0	ditto	7	9 1/2	£4 10 0
ditto...	101	12 1/2	£30 8 0	Copper Ore	33	15 1/2	£8 4 0
ditto...	100	12 1/2	£30 8 0	ditto	28	15 1/2	£8 4 0
ditto...	78	6 1/2	£23 13 0	Australian	35	3 1/2	£20 8 0

TOTAL PRODUCE.

Betta Cove..... 750..... £2399 18 0
Union..... 403..... £286 11 0
Virneberg..... 197..... £133 8 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Copper Miners' Company	280 1/2	£ 1,260 5 3
Williams, Foster, and Co.	529 1/2	£3,347 9 3
Mason and Elkington	100	£445 0 0
Charles Lambert and Co.	20 1/2	£95 8 0
Sweetland and Co.	306	£1,083 8 0
Landore Copper Company	242 1/2	£1,953 9 0

Total..... 1449..... £8,185 17 6

NO SALE on Aug. 5.

TOTALS AND AVERAGES.

Whole sale..... 21 cwt. Produce..... Price..... Per unit..... Standard.....
100..... 1449..... 10 1/2..... £8 13 0..... 10s. 4d. £75 16 0

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WEST ROSKEAR MINING COMPANY, TO BE SOLD, under the direction of the Registrar of the said Court, on Thursday, the 31st day of July instant, at Eleven o'clock in the forenoon, at the WEST ROSKEAR MINE, in the parish of Camborne, within the said Stannaries (in One or more Lots or Lots, and subject to such conditions as shall be then and there stated and produced), all that the INTEREST of the said company and in the SETT or LEASE under which its mining operations have been carried on, together with the WHOLE of the

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS

Belonging to the said company, and being within and upon the said Mine, and comprising—

ONE 66 inch cylinder PUMPING ENGINE, 10 feet stroke, with TWO BOILERS, 20 tons.

ONE 24 inch cylinder STEAM WHIM, fly wheel and cage, and ONE 11 tons BOILER.

Ironwork of steam capstan, 3 1/2 fathoms 17 inch drawing lifts, 1 1/2 fathoms plunger lift, with H and doorknees, a quantity of 7 inch and other pliers, 14 inch wood rods, 12 inch ditto, 9 inch ditto, 2 1/2 inch bucket rods, rod plates, staples and glands, bolts and burrs, 126 fathoms of ladders, 43 fathoms of double skip road, balance bob, shears and two sheaves, 1 horse whim, 3 shaft tackles and shieves, stands and pulleys, account house furniture, and numerous other articles and effects in general use in mines.

For full particulars of which apply to CHARLES WILLIAM CLINTON, the Official Liquidator of the said company, at the Stannaries Court Office, Truro; and for inspection of the said Machinery, &c., to the Valuer in charge at the Mine.

HOBBS HOCKIN, AND MARRACK, Truro.
(Solicitors for the Official Liquidator.)

Dated Stannaries Court Office, Truro, July 18th, 1879.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WEST ROSKEAR MINING COMPANY, ALL CREDITORS or CLAIMANTS of the above-named company, who have not received notice from the Official Liquidator thereof that their claims have been already admitted, are hereby required to COME IN and PROVE their SEVERAL DEBTS or CLAIMS at the Registrar's Office, Truro, on Wednesday, the 6th day of August next, at Eleven o'clock in the forenoon; or, in default thereof, they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such proof.

And for the purpose of such proof they are to attend in person, or by their solicitors or competent agents, at the time and place above mentioned.

FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, the 23rd day of July, 1879.

VERY VALUABLE LANDS AND MINERAL PROPERTY AT REDRUTH AND CAMBORNE, CORNWALL, FOR SALE.

MR. W. T. DAVEY (Auctioneer, &c., Redruth) WILL SELL, BY AUCTION, at Tabb's Hotel, Redruth, on Friday, the 1st day of August, 1879, at Four P.M., subject to the conditions then to be read, ONE UNDIVIDED THIRTIETH PART OF THE ENTIRE MANOR OF TRELEIGH AND LANDS OF TRENGWETH and NANCE'S LANDS, situate in the parish of Redruth, and the like part of LANDS called BOLINA, in Camborne, and also the like part of the MINERALS throughout the entire Treleigh Manor and Trengwith, Nance's, and Bolina lands.

West Treleigh, Treleigh Wood, Wheal Auger, East Tolgus, Treleigh Consols, Wheal Mary, Wheal Catherine, Wheal Harmony, Wheal Montague, Wheal Diamond, and part of Wheal Prussia are situate in Treleigh, many of which mines are considered most valuable, and some of the tin lodes running through the Manor are supposed to be among the best in the county.

All further particulars may be obtained of—
DOWNING, FAIGE, and KELLY, Solicitors, Redruth.

Dated Redruth, July 1st, 1879.

CARDIGANSHIRE.
In the parish of Llanbadarn-Fawr, about five miles from Aberystwith, and two miles from Bow Street Station, on the Cambrian Railways.

A HIGHLY DESIRABLE AND COMPACT FREEHOLD ESTATE OF ONE HUNDRED AND THIRTY TWO ACRES.

Comprising an excellent FARM of 109 acres, known as RHOSGOCH, in the occupation of Mr. John Jones; also a small FARM of 17 acres, called GWARWM, in the occupation of Mr. David Lewis; and the freehold GROUNDS, RENTS and REVERSIONARY INTEREST IN ELEVEN LEASEHOLD COTTAGES.

MR. G. T. SMITH is instructed to SELL, BY PUBLIC AUCTION, at the Belle Vue Hotel, Aberystwith, on Wednesday, the 27th day of August, 1879, at Three o'clock in the afternoon, the above property, which is bounded by the estates of Sir Pryse Pryse, Bart.; the Trustees of the late T. O. Morgan, Esq.; J. W. S. Bassall, Esq.; and others.

It will first be offered in One Lot, and if not sold, the two farms will be put up together, and each leasehold separately.

The property is in the immediate neighbourhood of Bronfford and other mines, and valuable deposits of lead ore are believed to lie underneath the estate.

Plan and particulars, with conditions of sale, will shortly be ready, and may be obtained from Messrs. TALBOT and WOOLMAN, Solicitors, Newtown; EVAN POWELL, Land Agent, Llanidloes; or from the Auctioneer, Aberystwith.

COAL FIELDS AT COATRIDGE TO LET.—
1.—The COAL in the LANDS of KIRKWOOD and BANKHEAD, as presently on lease to John Hendrie, Esq., extending to 250 acres, or thereby, consisting of the Unwrought Portions of the MAIN PYOTSHAW SPLIT, KILTONGUE, DRUMGRAY, and other SEAMS.

2.—The COAL in the LANDS of DRUMPAIR and CULHILL, as leased to Alexander M'Nab, Esq., consisting of the KILTONGUE, DRUMGRAY, and other SEAMS, and the Unwrought Portions of the MAIN PYOTSHAW SPLIT and VIRGIN SEAMS, extending to 80 acres, or thereby.

These Coal Fields are to be let conjointly, and are most conveniently situated, having a connection with the Caledonian Railway, Monkland Canal, and North British Rail way System. Entry to No. 1 will be on Whitson-day next, and immediate entry to No. 2.

The Lease of the Lands and Farm of Kirkwood and Bankhead (on which there is a house suitable for a lessee of the colliery) may also be arranged for, with entry at Martinmas and Whitson-day both next.

For further particulars, apply to Mr. MORTIMER EVANS, M.E., 97, West Regent-street, Glasgow, with whom may be seen the working plans of the colliery; also Mr. BRYAN Factor, Drumpeir, by Coatbridge; and Mr. EYFFE CHRISTIE, Writer, 22, George-square, Glasgow. Offers for the lease will be received by either of the two last named, and with either of whom arrangements may be made for taking over the colliery plant at a valuation.

Drumpeir, July, 1879.

FOR SALE, to close account, TWO VERY VALUABLE SETTS, having well known lodes of COPPER and TIN running through them for a great distance, and situated in an established locality. Ores of high percentage have been sold from these properties for many years, the working of late having been in private hands.

On the tin portion of the property there are large water-wheel, dressing gear, and floors, trams, and a variety of mining appliances and erections.

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Apply to WEAR and COLLEY, 23, Broad Chare, Newcastle-upon-Tyne.

FOR SALE.—GRAVITE SETT WORKS, near the town of NEVIN, CARDIGANSHIRE, near the sea, and convenient for loading. The price is moderate—the estate is freehold, and covers nearly twenty-six acres. Or would be LET ON LEASE to a desirable tenant. This is a bona fide speculation. Also,

FOR SALE, the LEASEHOLD INTEREST, with possession, of SLATE and SLAB QUARRIES in NORTH WALES, and now in full working order. Undeniable investment. Price £12,000.

Full particulars of the properties, or either of them, on application to Mr. BOND, Land Surveyor, 7, Castle-street, Liverpool.

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Dated Jan. 29, 1879.

18 H.P. PORTABLE STEAM ENGINE, with link motion reversing gear, ready for delivery; also gear to wind and pump.

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Also PAIR of 9 inch WINDING ENGINES complete, with 4 feet drum, geared 5 to 1.

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The Rev. R. RICHARDSON, Capenhurst, near Chester.

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THE DIRECTORS of the TALARGOCH MINING COMPANY (LIMITED), in order to complete an important development of the mine now in progress, propose raising £4000 additional capital by the ISSUE of 200 MORTGAGE DEBENTURE BONDS of £20 each, bearing interest at the rate of £6 per cent. per annum, payable by a first instalment of £5 in respect of each debenture as allotted, and the remaining £15 by three quarterly instalments of £5—respectively on October 1st, January 1st, and April 1st next—on the security of their plant and machinery, which is valued at £13,000, thus leaving a margin sufficiently ample to justify the directors in inviting subscriptions.

Applications for Forms of Application to be made to—

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Talargoch, July 22, 1879.

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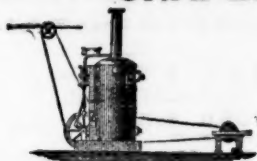
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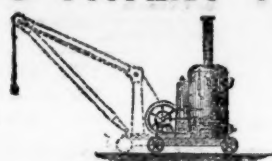
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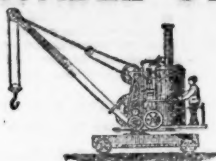
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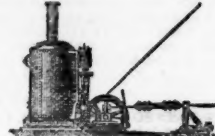
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WINDING ENGINE.

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The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. ALEX. CHAPLIN, specially designed and adapted for PUMPING, WINDING, HOISTING, SAWING, DRIVING MACHINERY, and for GENERAL CONTRACTORS' WORK, RAILWAY SIDINGS, COAL MINES, QUARRIES, GAS WORKS, &c.

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PARIS,
BRONZE MEDAL, 1867.



ORDER OF THE CROWN OF PRUSSIA.



FALMOUTH,
SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10, 28'30, 27'10, 28'40, 28'70 metres. Total advance of south heading during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL; and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them a value unapproached by any other system of Boring Machine.

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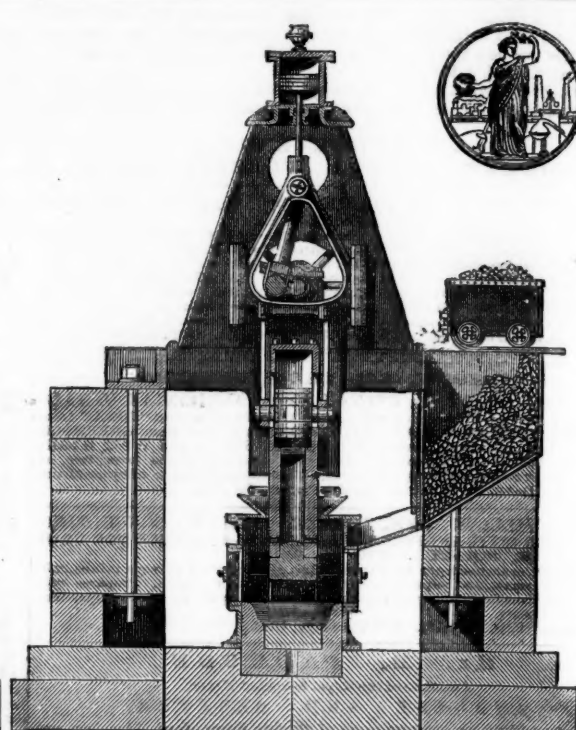
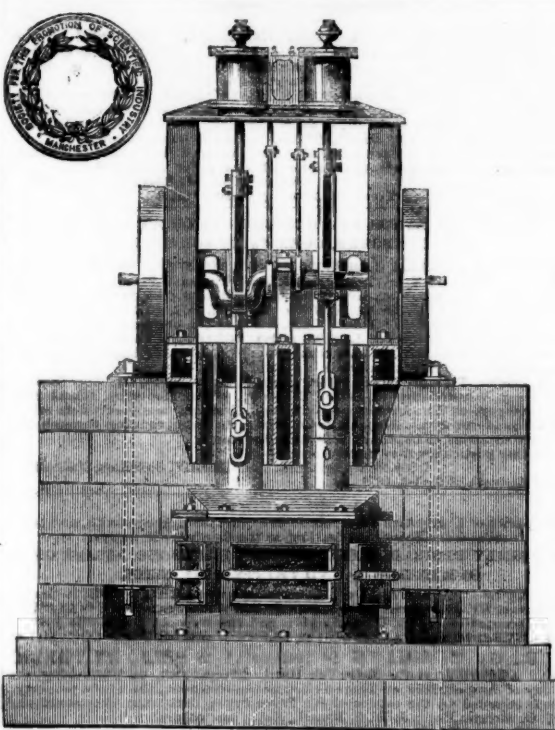
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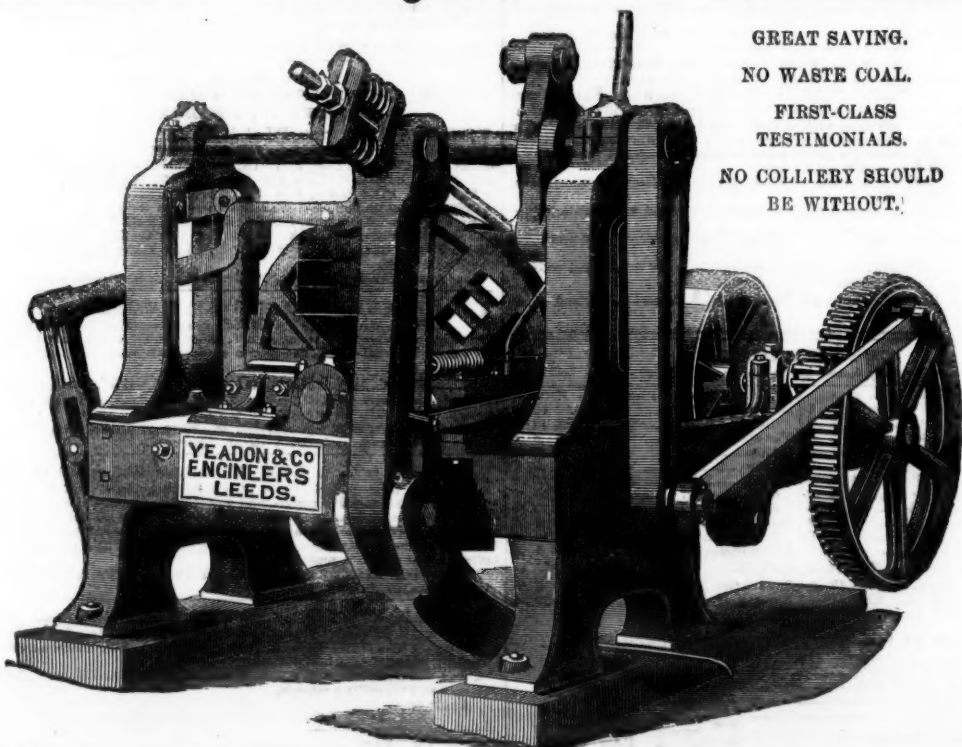
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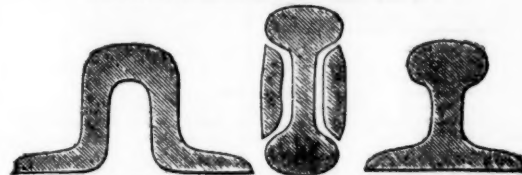
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Shares.	Company.		Paid.	Price.	
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15	Albion Steel and Wire Co. [L.]	14 0 0	—	dis
100	Altamont Colliery Co. [L.]	8 0 0	3½	8
3	Ashbury Co. [L.]	90 0 0	60	—
10	Begual, John, and Sons [L.]	.....	3 0 0	—	dis.
10	Bilbao Iron Ore Co. [L.]	.....	10 0 0	—	—
5	Bilson & Crump	.....	50 0 0	¾	1½
4	Blanc Cwmnach Coal Co. [L.]	.....	110 0 0	18	20
4	Blackocean Iron Ore Co. [L.]	.....	4 0 0	1½	2
100	Bolckow, Vaughan, and Steel Co. [L.]	.....	50 0 0	—	—
40	Bowling Iron Co. [L.]	.....	55 0 0	par	1
40	Britannia Ironworks [L.]	.....	80 0 0	—	pm
60	Brown, Bailey, and Dixon [L.]	.....	28 0 0	—	—
60	Brown, John, and Co. [L.]	.....	40 0 0	20	—
3	Cakemore, Cseway, Grn., &c., ord. sh.	.....	70 0 0	25	dis.
3	Ditto (7½ per cent. pref. shares)	.....	3 0 0	3½	—
60	Cammell and Co. [L.]	.....	3 0 0	3½	—
10	Cannock and Huntington Co. [L.]	.....	80 0 0	30	4
10	Cardiff & Swansea St. Coal Co. [L.]	.....	10 0 0	9¼	25
10	Cardigan Steel and Wire Co. [L.]	.....	9 0 0	¾	9
10	Chapel Swedish Iron and Steel [L.]	.....	8 10 0	—	¾
40	Charlton House Colliery	.....	15 0 0	1	—
50	Chartley Iron Co. [L.]	.....	50 0 0	1	1½
40	Charterley Iron Co. [L.]	.....	10 0 0	7	1½
10	Chillingham Iron Co. [L.]	.....	10 0 0	5	10
10	Consent Iron Co. [L.]	.....	7 10 0	13½	8
1	Consent Spanish Ore [L.]	.....	1 0 0	8	¾
60	Cooke, William, and Co. [L.]	.....	45 0 0	45	¾ dis.
20	Darlington Iron Co. [L.]	.....	12 10 0	—	—
10	Davy Brothers [L.]	.....	22 10 0	3½	3½
8	Diamond Fuel Co. [L.]	.....	5 0 0	3	¾
28	Ebbw Vale Co. [L.]	.....	20 0 0	18½	18
100	Fox, Samuel, and Co. [L.]	.....	80 0 0	4	4½
10	General Mining and [L.] (retained)	.....	5 0 0	—	—
5	Great Western Coal Co. [L.]	.....	2 0 0	—	—
2	Gwynnwillim Colliery Co. [L.]	.....	2 0 0	—	—
10	Hopkins, Gilkes, and Co. [L.]	.....	12 0 0	—	—
1	Howies, Andrew, and Sons [L.]	20 0 0	14	18
10	Lilly Hall Coal, Iron, & Firebrick [L.]	10 0 0	—	dis.
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10	Lynette, Ogmere, & Tondou Co. [L.]	50 0 0	5	5½
2	Kidney and Wigpool Iron Ore [L.]	8 0 0	9	8
Marblehead Iron Ore Co. [L.]	.....	10 0 0	1	1½	—
Marssey Steel and Iron Co. [L.]	.....	8 0 0	—	—	—
Midland Iron Co. [L.]	8 0 0	—	—	—
Monk's Argood Colliery Co. [L.]	8 0 0	2½	—	dis
Monks' Iron and Coal Co. [L.]	8 0 0	—	—	—
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Newbudda Coal and Iron [L. & Red.]	2 0 0	12	3½	dis.
New Sharlston Collieries [L.] Pref.	20 0 0	2½	3½	dis
Newport Abercrombie Coal Co. [L.]	.....	10 0 0	4½	—	—
Northampton. Coal, Iron & Wagon [L.]	.....	8 0 0	—	—	—
Northfield Iron Co. [L.]	.....	8 10 0	8	—	—
Norton Green Coal Co. [L.]	.....	1 0 0	—	7½	dis.
Palmer's Shipbuilding and Iron [L.]	.....	28 0 0	15	—	—
Parkgate Iron Co. [L.]	.....	55 0 0	30	14½	dis.
Patent Nut and Bolt Co. [L.]	.....	14 0 0	4½	28	dis.
Patent Shaft and Axletree [L.]	.....	10 0 0	1	5½	pm
Pelissal Coal and Iron [L.]	.....	17 10 0	11	10	dis.
Phoenix Bessemer Co. [L.]	.....	40 0 0	—	—	—
Rhymer Iron Co. [L.]	.....	50 0 0	8	10	—
andwell Park Colliery Co. [L.]	.....	10 0 0	12½	13½	—
Ditto New	.....	10 0 0	12½	13½	—
Hotts Iron Co. [L.]	.....	100 0 0	55	60	—
Ilkeston Iron and Coal [L.]	.....	80 0 0	50	47½	dis
Blackstone & Dodworth Cl. & Iron [L.]	33 0 0	30	28	dis
Leicester Ironworks [L.]	20 0 0	—	—	—
Leicester Electro Iron Co. [L.]	50 0 0	—	—	—

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Submarine	10	0 00	6%	7%
United States Cable	20	0 00	10%	17%
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Northern	10	0 00	7%	8
European	25	0 00	8%	8%
Persian Extension	8	0 00	20%	21%
.....	8	0 00	2%	3
.....	100	0 00	22%	10
India and Panama	10	0 00	3%	1%
and Brazilian	10	0 00	3%	1%
Union, 7 percent. Mors. Bonds	1000	0 00	3%	3%
.....	.....	.....	118	123

MISCELLANEOUS

and Great Western Leased				
Rental Trust	100	0 00	55	55
an Agricultural	21	10 00	88	90
ort, Land and Finance [L.] ..	5	0 00	4%	5
Engin. [L.]	8	0 00		pm
re and Ohio, 8 per cent.	100	0 00	111	115
Aquarium [L.]	10	0 00	6%	7
New Jersey Con. Mort.	100	0 00	101	103
ific of Calif., 1st Mort. 6 p.c.	100	0 00	112%	113%
ondon Real Property [L.]	12	0 00		
Rock Boring	4	10 00	3%	3%
and Foreign Credit	8	0 00		d's
and Warehouse [L.]	14	0 00		
orters and Co. [L.]	10	10 00	18%	6 pm
s. & Chem. Works Co. [L.] ..	5	0 00	16%	rd
[L.]	1	0 00		
unnel [L.]	1	0 00		
Bay Company	17	0 00	13%	14
on Copper and Sul. Co. ...	9	0 00		
entral, \$100 shares	100	0 00	90	91
St. Louis Bridge, 1st Mort.	100	0 00	88	90
ort, 7 per cent.	100	0 00	43	48
nk. Sinking Fund, 6 p. cent.	100	0 00	103	105
er cent.	100	0 00	114	116
redit [L.]	7	10 00	7%	7%
rius Ceramicate			6%	7
Con. Mort., A, 6 p. cent. 170	0 00	106	108	
ife [L.]	10	0 00	8	9
iscount [L.]	10	0 00	9%	10
ail. Con. Mort., 6 per cent.	10	0 00	93%	94%
ulphur Co. [L.]	10	0 00		
d Co. [L.]	8	0 00	% dis	% pm
and Oriental Steam	20	0 00	42	44
nd Mort. 6 p. cent., 1880.	100	0 00	118	117
nk. Fund, 6 p. ct., 1908	100	0 00	108	109
nt. Investment Company.	100	0 00	180	190
er cent. Preference	100	0 00	127	129
shares	20	0 00		
nd Bonus & Mainte. [L.] ..	12	0 00	30%	31
nd Bonus Three per Cents.	5	0 00	2%	2%
nd and Copper Co.	10	0 00	21%	22%
and Land Grant, 1st Mort.	100	0 00	115	117
ad Railway, 1st Mort.	100	0 00	112	114
and Compressed Peat ...	5	0 00		
.....	2	0 00		

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Araucos		Mines.							
		Paid.	Last Pr.	Clos.	Pr.	Last Call.			
12000	Argentina, g, Argentine Republic	5 00	---	---	---	---	---	---	7000 Plot
30000	Blue Tent, Syd., California	5 00	---	---	---	---	---	80 Place	
10000	Buena Ventura, s, California	5 00	---	---	---	---	---	0:00 Plym	
15000	Candana, s, i, Llano de las Infantas, Spain (23 sh.)	5 15	---	2 1/2	2 1/2	...	Fully pd	12000 Plym	
49935	Chautauque, s, Nicaragua*	1 00	---	---	---	...	Fully pd	10000 Port	
75000	Colombian Hydraulic, g, Colombia	2 00	---	3 1/2	2 3/4	...	Fully pd	2000 Price	
18000	Condes de Chilli, s, i	1 00	---	---	1s. 2s.	...	Fully pd.	5182 Price	
20000	English Australasian, s, Victoria*	5 00	---	---	---	...	Fully pd.	4000 Reliev	
35 000	Exetolar Hydraulic Gold Washing Co., California*	1 00	---	---	---	...	Fully pd.	5000 Rhyo	
1 00000	Exchequer, g, s, California*	1 00	---	---	---	...	Fully pd.	18000 Rock	
90000	Fronteno, i, Ontario Canada	1 00	---	---	---	...	Fully pd.	4000 Snow	
40000	Holcombe Valley, g, California	1 00	---	3/4	3/4	...	Fully pd.	5000 So	
10000	Hornachos, s, i, Spain	1 00	---	---	---	...	Fully pd.	6000 South	
12000	Huitfall, s, i, bl, Oreb, Sweden	10 00	---	---	---	...	Fully pd.	5 2 South	
12000	Hunter Consolidated, s, i, Utah	5 00	---	---	---	...	Fully pd	5000 So. M	
20000	Imperial Brazilian Collieries, Brazil*	10 00	---	2	1 1/2	2	...	18000 South	
1500	Isabelle, g, s, California (220 shares)	5 00	---	---	---	...	Fully pd	6000 South	
100000	L. X. L., g, s, California*	5 00	---	---	---	...	Fully pd	6000 South	
50000	Javali, g, Nicaragua*	1 00	---	---	---	...	Fully pd	937 South	
3500	La Manche, i, Newfoundland	3 00	---	---	---	...	Oct. 1878	12000 Stedd	
7587	Lustanian, Portugal* (46 sh.)	10 00	---	6s.	4s. 6s.	...	Fully pd.	5000 St. L	
10000	Messenberg, s, Honnet, Germany*	4 15	---	---	---	...	Fully pd.	10000 Stucco	
4588	Missouri Lead Mining & Smelting, U.S. pref. (100 sh.)	4 00	---	---	---	...	Last call, May 1879	30000 Talybo	
40000	New Benesora, s, i, Germany	4 00	---	---	---	...	Fully pd	40000 Tamar	
50000	New Benesora, s, Venezuela	4 00	---	4 1/2	4 1/2	4000 Teada	
50000	New Zealand Kapanga, g, Oromoromano	5 00	---	2 1/2	1 1/2	2 1/2	...	10000 Temple	
3000	Oregon, g, Oregon, U.S. (preference shares in commandite).	1 00	---	---	---	...	Nov. 1878	14000 Teign	
3000	Oregon, g, Oregon, U.S. (preference shares in commandite).	1 00	---	---	---	10000 Temple	
3000	Panuellico, s, Chile* (280000 debentures)	4 00	---	3/4	3/4	...	Fully pd.	5000 Treigie	
3000	Pestanea United, s, Chile*	4 00	---	1 1/2	1 1/2	...	Fully pd	12000 Trethe	
5000	Pitanguy, g, Brazil (1000 sh. & 1 fully paid)	3 00	---	3/4	3/4	...	Fully pd.	640 Truro*	
5000	Placerville, g, g, California	9 00	---	3/4	3/4	...	Fully pd.	5000 Tyn-v	
5000	Providencia and New Rosario, s, Mexico*	2 00	---	2 1/2	2 1/2	...	April 1879	5000 Ditto	
0000	Ravenscliff, g, New Zealand, s, Mexico*	1 00	---	---	---	...	Fully pd	1000 Van Co	
181,000	Rio Pinto, s, c, Nevada, s, South Australia.	0 50	---	---	---	...	Fully pd.	10000 Vaghna	
0000	Rossa Grand, g, Brazil* (41 shares)	Stock	---	---	---	...	Fully pd.	13000 Victor	
0040	Russia Copper, Oreb, and Uranium	1 00	---	71	68 70	...	Fully 1878	12000 West	
0000	Sainten, s, i, bl, Arlege, France	10 00	---	3s.	1s. 2s.	...	Fully pd.	4000 West B	
0000	Silver Plume, s, Colorado*	1 00	---	---	---	...	Fully pd.	5500 West C	
0000	Teocoma, s, Utah*	1 00	---	---	---	...	Fully pd.	7000 Ditto	
174	United Mexican, s, Mexico**	10 00	---	---	---	...	Fully pd	300	

Closing Prices		Closing Prices	
Argentine, 1888, 6 per cent.	75 1/4	Foreign and Col. Gov. Trust, 6 p. cent.	68 73
Belgian, 6 per cent. Bond Com. Cert.	94 35	Do., 6 per cent., 2d issue	68 73
Brazilian, 1886, 5 per cent.	92 34	Do., 6 per cent., 3d issue	68 73
Italian, 1886, 7 per cent.	94 35	Do., 1872, 4th issue	68 73
Spain, 6 per cent. 1886, 5 p. cent. coupon bonds	77 80	Do., 1872, 5th issue	68 73
Do., unified debt, 6 per cent.	72 10 1/2	Peruvian, 1870, 6 per cent.	68 73
Do., 7 per cent. V.M. & C.	74 48 1/2	Do., 1872, 6 per cent.	12 12 1/2
Do., 8 per cent. V.M. & C.	78 80	Russian, 5 1/2 per cent. L. Mort.	10 10 1/2
Do., K. Belin Saah	78 80	Spanish, Quinquennial Mort.	10 10 1/2
	81 80	United States Mortgage Mort. 6 p. cent.	100 102 1/2

* Limited Liability Companies; † quoted on the Stock Exchange.
I have paid dividends